RESEARCH PROGRAM ON Grain Legumes and Dryland Cereals

CGIAR

Minutes of the 8th meeting (Virtual) of the CRP-GLDC Independent Advisory Committee (GLDC-IAC)

Date: 21 and 22 October 2021: 4:00-6.45 PM (IST)

	GLDC-IAC Meeting	Interactive Session
Day I:	**4:00 to 4:40 PM**	**4:40 to 6:45 PM**
Day II:	**6:30 to 6:45 PM**	**4:00 to 6:30 PM**

Venue: BlueJeans Video Conference

Attendance

S. No.	Name	Role in GLDC-IAC
1	Dr Etienne Hainzelin, Advisor to the President of CIRAD and Visiting Professor EDIM, University of Ottawa	Chair
2	Dr David Chikoye, Director, Regional Hub for Southern Africa, IITA	Member
3	Dr Ravi Prabhu, Deputy Director General – Research, ICRAF	Member
4	Dr Herve Thieblemont, Regional Seed Business Development Lead, Asia and Mekong region Director, Syngenta Foundation	Member
5	Dr Michael Battaglia, Research Director, Agriculture And Global Change, Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Member
6	Dr Mariame Maiga, Regional Adviser Gender and Social Development, West and Central African Council for Agricultural Research and Development CORAF/WECARD	Member
7	Dr Jane Ininda, Head, Seed Research and Systems Development, AGRA	Member
8	Dr Geoffrey Heinrich, Senior Technical Advisor, Agriculture Livelihoods and Environment, Catholic Relief Services	Member
9	Dr Jacqueline Hughes, Director General, ICRISAT	Member
10	Dr Kiran Sharma, Director, CRP-GLDC	Secretary, IAC

Apologies

1	Dr Uma Sah, Principal Scientist (Agcl. Extension), ICAR-Indian Institute of Pulses Research (IIPR)	Member

The following agenda items were discussed:

1. Welcome and Introduction

Dr Etienne Hainzelin, Chair, welcomed the IAC members. The Chair opened the meeting and the agenda was adopted by the IAC. He mentioned that the meeting was being held over two days and was the last meeting of the GLDC-IAC. In addition to the IAC meeting, there would be online interactive sessions amongst the IAC observers and FP leaders and Cross-cutting Focal Persons spread over the two days.

The record of discussions of the interactive sessions is attached as Annexure-I.

The minutes of the 7th GLDC-IAC meeting, which was held on 12 April 2021, were endorsed by the IAC.

2. GLDC update

Dr Kiran Sharma provided an update to the IAC members on the progress made since the last meeting in April 2021. The presentation covered the following topics:

- Annual Report 2020 & Highlights
- CRP-GLDC Golden Eggs/Legacy Products
- Mid-Term Progress Report 2021
- Annual Report 2021process
- Update on Milestones
- W1/W2 Vs W3/Bilateral Projects Investment
- Newsletters 2021
- CRP-GLDC Close-out Plan

IAC discussed the CRP-GLDC close-out plan and in response to the IAC comments Dr Sharma clarified the following:

Staffing: Each CRP has been permitted to accrue up to a maximum of US$ 60,000 in relation to staff time that will be used in 2022 to complete the final reporting obligations of the Program from January-April 2022, including the annual report 2021. CRP-GLDC PMU will remain operational till 30 April 2022 to fulfil the reporting obligations.

Program Participant Agreement (PPA): All partners were informed about the closure of CRP GLDC on 31 December 2021 through official communications in September 2021. The existing PPA signed in 2018 will become invalid on 31 December 2021 and all the unspent funds of W1/W2 will be returned to ICRISAT by 15 February 2022.

Intellectual property: Specific tasks to manage intellectual property under CRP-GLDC is a responsibility of the Lead and GLDC Participating Centers. The GLDC participating centers are required to maintain all records of the intellectual property of CRP-GLDC products and also ensure that the CGIAR Open Access and Data Management Policy is followed, as and where appropriate.

M&E Database: CRP-GLDC will continue to use the MEL Platform to facilitate collection, processing, storage, and publishing of data and knowledge products as presented in the annual plan of work and budget 2021 till April 2022. The MEL development team at ICARDA will be required to provide the PMU/ICRISAT a copy of the CRP-GLDC data in MEL as a portable stand-alone database compiled with a front-end to allow viewing, querying and extracting the data. The portable MEL database will be housed/archived on the GLDC server. To support the PMU from Jan-Apr 2022, ICARDA has already been allocated a budget allocation of US$ 28,000 (from the permitted accrual of US$ 60,000) through an amendment to the PPA signed in 2018. The PPA with ICARDA will end on 30 April 2022.

CRP-GLDC Website: The website will be archived on the existing GLDC server. It will be updated till 30 April 2022 and will be maintained by the MEL developer from ICARDA throughout the remainder of 2022, including the websites of previous phase CRPs DS, DC and GL.

Documentation:

- Financial documents: All financial reports and records are maintained by the Finance department of ICRISAT.
- Agreements and Sub-grant agreements: Records of all agreements and sub-grant agreements issued on behalf of CRP-GLDC are maintained by the Grants/Strategic Marketing & Communications (SMC) team of ICRISAT.
- PMU documents: All documents relating to the CRP-GLDC performance management are available on GLDC server at http://gldc.cgiar.org/pms/ and this link will be kept updated with the latest information till 30 April 2022.
- CRP-GLDC research activities: All research activity details, reports, including Innovation Fund and research outputs are available as global public goods at https://mel.cgiar.org/ and this link will be kept updated with the latest information till 30 April 2022. The MEL data will be archived on GLDC server and will also be available for public access beyond 30 April 2022.

IAC members deliberated on the possibility of continuing with the existing GLDC partnerships and carrying forward the GLDC legacy beyond the CRP tenure, especially in the case of ICRISAT and CIFOR-ICRAF as they will not be part of the One CGIAR.

Dr Jacqueline Hughes agreed with the Chair and emphasized the need for a greater engagement with scientific partners and strengthening the existing GLDC partnerships with development institutions, especially NARS, in knowledge production and capacity building to keep the GLDC research diversified. Dr Hughes assured that ICRISAT would continue strengthening GLDC partnerships through ongoing and future bilateral projects, identifying areas of mutual interest, bringing in support from external funders and work with NARS.

Dr Hughes proposed the idea of creating a network of GLDC partners for continuous momentum to ensure continuity in delivering the GLDC global mandate and carry forward the CRP-GLDC legacy, if not all at least part of it beyond 2021. The main objective of this network could be to prioritize strategies to enhance the visibility of GLDC crops, which CRP-GLDC has been promoting very effectively. The proposed network will include new national-level partners who are not part of One CGIAR. At the same time, this network will also be open to partners from the One CGIAR network, who will be vital for strengthening ICRISAT research priorities.

Dr Hughes stated that there is an opportunity to link with the global efforts for the International Year of Millets 2023, and the proposed network could be a catalyst in driving the GLDC agenda globally. But, running a network will require financial resources and will not be an easy task, especially in the absence of the W1/W2 funding. ICRISAT proposes to lead in creating a network, which is inclusive and also to provide fundraising support to the partners.

IAC supported the idea of creating a network of GLDC partners in 2022. Dr Ravi Prabhu raised his concern about the resource constraints to take it forward, and emphasized on focusing to identify the need of the global community to drive the GLDC agenda, and the proposed GLDC network could help achieve that. He suggested reconvening in a small group to formulate a proposition to the international donors, who are not part of the One CGIAR, for a partnership in response to nutrition, climate change, and agriculture transformation challenges that all countries are facing. This approach can interest the donor community as well, besides helping generate resources to support a small secretariat and mission-oriented delivery of a program of mandate crops of ICRISAT with capabilities and capacities of GLDC and non-GLDC partners.

3. Closing Remarks

The Chair thanked the IAC members for supporting the CRP-GLDC team with their insight and guidance. The Chair also thanked the DG/ ICRISAT and Director CRP-GLDC for achieving the planned milestones and fulfilling the GLDC mandate successfully despite the early closure of the CRP by a year.

Dr Jacqueline Hughes thanked the Chair for leading the IAC effectively and the IAC members for their valuable role in the transparent governance of CRP-GLDC. Dr Hughes also thanked the CRP-GLDC team for their efforts in fulfilling the mandate for 10 GLDC crops (*Grain legumes*: chickpea, cowpea, pigeonpea, groundnut, lentil, soybean and common bean, and *Cereals*: sorghum, pearl millet and finger millet) in 17 countries across Sub-Saharan Africa *(Burkina Faso, Ethiopia, Malawi, Mali, Mozambique, Niger, Nigeria, Sudan, Tanzania, Uganda, Zambia and Ghana)*, South Asia *(India and Myanmar)*, Central America *(Guatemala, Honduras) and* Latin America *(Colombia)*.

Dr Kiran Sharma thanked the IAC Chair and DG/ICRISAT for their leadership in managing and delivering the GLDC research program. Dr Sharma appreciated the efforts of the CRP-GLDC team in the delivery of the GLDC research activities and fulfilling the IAC recommendations.

The meeting ended with a vote of thanks to the Chair.

Annexure-I

Record of discussions

Online Interactive Session

between

IAC Observers and FP leaders and Cross-cutting Theme Focal Persons

Date: 21-22 October 2021
Day I: 4:40 to 6:45 PM (IST)
Day II: 4:00 to 6:30 PM (IST)
Venue: BlueJeans Video Conference

A special session was organised during the IAC meeting on 21-22 October 2021 to facilitate interaction between the IAC observers and the Flagship Program (FP) Leaders and Cross-cutting (CC) Theme Focal Persons. The meeting was also attended by the Cluster of Activity (CoA) Co-leads.

The FP leaders and CC Theme Focal Persons made presentations to apprise the IAC members and the designated IAC observers of the progress made since 2018 and update on the actions taken in view of the last IAC recommendations given in Annexures-II & III.

Below is a summary of the responses to the comments and questions raised by the designated IAC observers and IAC members to the presentations made during this session.

FP1: Priority Setting and Impact Acceleration

Presenter: **Arega Alene, FP1 Leader**
IAC Observer: **Etienne Hainzelin and Michael Battaglia**

Discussion Points:

Question 1: FP1 has generated a lot of evidence of impacts of GLDC technologies, but how are the findings communicated to the donors given that these technologies are the product of several years of investments and cannot be attributed to CRP-GLDC alone?
Response: With the recognition that technology generation, dissemination, and adoption require sustained investments over a period of 20-25 years and involves several programs, projects, and institutions, our impact assessment work as well as the subsequent communication of the findings (e.g. annual reports, OICRs, Comms briefs, etc.) focuses on bringing out contributions of various past and present programs, projects, and institutions by linking technologies to past investments rather than trying to attribute impacts to any particular program such as CRP-GLDC or institution.

Question 2: The market and trait preference studies are very important to advance the market-led breeding agenda, but to what extent are the breeders using the results of such studies?
Response: There is a lot of demand for these studies (e.g., from the AVISA project) and this provides an opportunity for FP1 team to inform breeding decisions. The results of these

studies are now being used by breeders to develop the product profiles for GLDC crops under the AVISA project and also under the Excellence in Breeding platform (EiB).

Question 3: The demand-led breeding responds mainly to current demand or trait preferences. How would future demand or preferences be captured to ensure that breeding efforts also respond to future needs?
Response: Foresight studies are planned to be conducted in the AVISA project to assess future demand including trait preferences. More specifically, participatory foresight analysis will be conducted to estimate the magnitude and geographical distribution of future demand and gender-differentiated trait preferences. The major limitation of demand-driven breeding following the private sector model is its focus on current demand despite the long research lag where, even in a modern rapid-cycle breeding program, it can still take up to 5-7 years before a new variety becomes available to farmers.

FP3: Integrated Farm and Household management

Presenter: **Jules Bayala, FP3 Leader**
IAC Observer: **Geoffrey Heinrich**

Discussion Points:

Question 1: What percentage of the successes in cropping systems work came from simple 'green revolution'-type technologies versus more complex agro-ecological interventions?
Response: We have both components, there is a gradient of complexity moving from CoA3.1 where we are mostly dealing with simple technologies, to CoA3.3, where we have more complex scenarios of combinations of different components with crops, livestock, trees.

Question 2: What is your experience with the most effective methods for getting them into the hands of farmers?
Response: For the most effective methods, we are learning by doing. The aim of this flagship is to capacitate key stakeholders; most of the activities are on-farm involving direct beneficiaries and by doing so our actions can easily spread into social learning process.

Question 3: Of the production systems technologies, which were the most successful ones in getting them out and are NARES effective in pushing these complex technologies and not just varieties?
Response: Yes, at NARES level colleagues are trying to deal with more complex solutions

Comment: Production system technologies are critical but more complex to getting them out, e.g., while CRS is having some success in promoting doubled-up legumes in Zambia, it is critical to improve market systems to create the demand for the technology, so we need to involve more stakeholders beyond the traditional NARES.

Question 4: The gender activities in CoA3.1 have just started, will they be completed before the end of the CRP?
Response: Some of these activities will be completed. For example, the legume hand push planter and the results seen so far; we need to consider the cost of the planter, and are farmers going to buy it, they usually complain that machinery are too expensive.

Question 5: How are farmers going to be able to use the models to take decisions ?
Response: Gender work in CoA3.1 is within a bilateral project mapped to GLDC and will continue

beyond the CRP-GLDC. We don't know about the actual cost of the planter, maybe Steve can give more details. Farmers will not be using the models, they will need to be transformed into some knowledge products, so there is still some work ahead.

Question 6: Do we have an assessment which quantifies the impact and the value of some of the tools you presented, and did we make a difference in people's lives? Is there any paper from this work we can refer to?
Response: This is not something we could have done within the timeframe of the program. This impact assessment will occur beyond the lifespan of the program. Our impact assessment team had developed a range of indicators, and the tool is going to be taken up as one of the 'Golden Eggs' by the One CGIAR, and hopefully be used to assess the impact.

Comment: You have provided good answers to the 2nd IAC recommendation, but the question remains about the use of these tools to take decisions, and the capacity of farmers to use the results of a complex indicator setting for sustainability and provide answers to specific context. That will remain a challenge.

FP4: Variety and Hybrid Development

Presenter: **Janila P, FP4 Leader**
IAC Observer: **Jane Ininda**

Discussion Points:

Question 1: How do small and medium seed enterprises produce hybrid seed in India? Is replicating such models an option in Africa?
Response: The small and medium seed enterprises play a key role in enhancing access to the improved seed of GLDC crops. They produce seed by engaging trained farmers where the seed is produced in farmer's fields with a buy back agreement. Farmers are trained on the aspects of hybrid seed production and the seed field plots are monitored regularly. Such a seed model results in benefits to the seed-enterprises, seed producing farmers and improves availability of hybrid seed to the farmers and creates business. This is an economically efficient and viable model that can be replicated in Africa.

Question 2: Crop Network Group (CNG) is an ideal model to engage the diverse stakeholders from design, development, testing and delivery of GLDC cultivars. How can we ensure continuous engagement of the stakeholders of the CNG?
Response: CNGs were established under the CRP-GLDC and they require some years of nurturing before they emerge as self-sustaining innovative networks and as a knowledge sharing platform. The financial support to manage the Network is the most important aspect that makes the CNGs sustainable. CNGs can also be hosted by institutes by providing the financial assistance. The CNGs established under the CRP-GLDC need financial assistance and guidance for some more years.

Question 3: We see good level of engagement with the Excellence in Breeding Platform (EiB) in knowledge sharing activities of FP4 as well as providing technical support on the aspects of developing breeding schemas, and mechanization of crop breeding operations. What is the FP4's plan to continue this engagement post CRP-GLDC given that ICRISAT did not join One CGIAR unified governance?
Response: Yes, the engagement with EiB helped the breeding teams at ICRISAT, ICARDA and IITA in capacity building activities. The engagement post CRP-GLDC will be guided by the leadership team at ICRISAT.

FP5: Pre-Breeding and Trait Discovery

Presenter: **Damaris Odeny, FP5 Leader**
IAC Observer: **Herve Thieblemont**

Discussion Points:

Question 1: How will the work that has been started here be maintained in the future and how do you make sure this work will be accessible to different kinds of institutions from different sectors, including the private sector? What model can be developed to make sure the products will be accessible? Will the various research centres that were involved in generating the products be able to provide some customised services for any organization interested in using the products?
Response: The plant genetic resources that have been generated, whether pre-bred or new mapping populations, will be made accessible through public gene banks. The breeders can particularly access any of the resources generated through standard material transfer agreement (SMTA) from any CGIAR gene banks. In terms of tools and toolkits, for example the Quality Control (QC) markers, it is important to indicate that the work was done in collaboration with the Excellence in Breeding (EiB) Platform. EiB has a model in which the private sector is involved in the service provision of the tools. This model, therefore ensures that the tools are used and are accessible to different organizations. The EiB subsidises national partners to access the resources without paying extra charges. If a private company wants to use the same resources, they would pay the full cost of the respective tool and/or service being provided.

In cases where we have existing bi-lateral projects, we utilise the funds from those projects to ensure partners' access to the tools. An example is groundnut, where a bilateral project was used to pay for the development and validation of QC markers for Eastern and Southern Africa. We expect that this model will continue to work, for as long as we still have support from EiB.

Question 2: What about the partnerships and on-going collaborations? What provisions are you making to ensure the partnerships are maintained? Will all the future efforts be purely based on the EiB model?

Response: Most of the activities implemented in the CRP-GLDC have been a result of collaborations and partnerships of several different public-private institutions that will continue to exist beyond the current GLDC project. For those organizations that will be part of the One CGIAR, there will be models on how to share resources and implement them. This is especially the case in FP5 where we have generated some of the best resources. For example, this is the first time we have developed the QC panels for some of the target crops, and therefore, we would expect that these products will continue to be sought after through different avenues.

Question 3: Are you aware of any projects that are currently being built based on the outputs from GLDC?
Response: Yes, I will give you an example in groundnut. We have a project that is funded by USAID through the Peanut Innovation Lab. The project involves national partners from six countries that are actively using the QC markers developed under this project. This project will go on until the end of 2023.

Question 4: Are you aware of natural access to the molecular markers that you developed by private companies?

Response: Yes, an example in pearl millet and sorghum where we have consortia of institutions involved in the development of hybrids. There are private companies involved in those consortia that are already using the fertility restoration markers. The FP4 leader also provided two examples

of private companies using groundnut markers; one is Peanut Company of Australia and the other is ACI seeds based in USA.

FP6: Common Bean for Markets & Nutrition

Presenter: **Jean Claude Rubyogo, FP6 Leader**
IAC Observer: **Not assigned**

Discussion Points:

Question 1: On Zimbabwe seed supply slide, you indicated that all the seed supplied by seed producers is 100% from the variety released in less than 10 years. Was this based on total acreage or only seed supplied by seed producers?
Response: This was based on seed supplied by seed suppliers (formal), and not the total national seed requirement.

Question 2: What does the supply represent in relation to the total seed requirement?
Response: This represents about 50% of total seed requirement.

Question 3: What are the incentives for small-scale seed producers to be engaged in seed production and supply? Do they depend on contract with seed companies?
Response: The major incentives are from the demand of seed by farmers which is leveraged by a mixed system of either contract, capacity building and linking with grain market and grain traders who provide market signals.

Question 4: Regarding the digital platform through MasterCard Farm network, is it for women or men? – what do you do to target women even though beans are women crop but men tend to get advantages of the crop once it becomes commercial?
Response: The digital platform is for every willing farmer – however, since the digital profile is done regardless of the gender, it gives women equally opportunity to register and when they supply the grain to the off-takers – the payment is done directly through their mobile money account (M-Pesa) or their bank account. The digital platform is an equity tool so that women and men are equally incentivized to produce.

Question 5: Are there times where both women and men from the same households are registered?
Response: Yes, it is possible because sometime the family members (husband and wife) have separate bean plots – therefore their harvest and marketing are done separately.

Cross-cutting Themes

1. Markets & Partnerships in Agri-Business (MPAB)

Presenter: **Andrew Hall, Focal Person**
IAC Observer: **Ravi Prabhu**

Discussion Points:

MPAB presented an overview of work completed to date, clustering the work around keys topics that highlights the strategic significance of research completed. This analysis was drawn together by outlining the contours of a new impact narrative / theory of change for the CGIAR aligned to an agri-food systems transformation framing. The IAC was broadly supportive of the strategic messaging presented.

Comment: The IAC pointed out that there is still interest in exploring the what if scenario around the unfunded FP2. It was suggested that this could be a useful input into the final analysis of the CRP-GLDC and in discussions related to post-CRP-GLDC ways forward.
Response: MPAB suggested that perhaps a useful way of elaborating this would be to discuss how, with the benefit of hindsight, a reinterpret FP2-like flagship (MPAB style) could have acted as a focal point to help other flagships explore and interpret experiences with market engagement and impacts more generally. Its role (in this reinterpretation) could have helped support a more reflexive, learning-oriented approach by the CRP that recognised that GLDC was an experiment in how to better align commodity research with the impact agenda and to help pioneer a new / more effective approach.

Question: How could partners be brought in earlier at the point of problem framing? Should this be at the point of the design of a whole CRP-like programme?
Response: MPAB suggested that a CRP-like programme would need to first land on a mission-like focus (rather than a commodity focus): For example; "halving undernutrition by 50% in the drylands". This would require strategic consultations (rather than active partnerships). The approach could then be to build partnerships around a series of sub-missions where stakeholders jointly define problems that are aligned to the overarching mission objective and then work collectively to resolve these through research, but also through other forms of social, business, institutional and policy innovation. The role of the programme would be to use a portfolio management approach to actively manage for impact, using the sub-missions as way of learning about how the agri-food system is responding to interventions and redirecting efforts where needed.

Question: What have we have learnt about technology delivery mechanisms?
Response: In the case of the high rates of adoption chickpeas in Andhra Pradesh in India, of course effective seed delivery systems were important and where well developed and well resourced (also farmer to farm spread was equally important at later stages). However, it was explained that, based on the chickpea case in Andhra Pradesh, the adoption rates were less to do with the effectiveness of seed delivery, but more concerned with the evolution of the agri-food system and the way this changed the opportunity landscape, enabling and incentivising farmers to search out and try new technology options. Interestingly, in a sister study in Myanmar, where seed systems and public extension services were largely absent, similar high adoption rates were achieved. Again, it was changes in the global market that caused this and encouraged farmers to seek out new varieties, mainly through farmer to farmer exchanges.

Question: Given the time-consuming nature of a more partnership-orientated and consultative approach implied by the systems framing presented by MPAB, did the CGIAR have the time to follow this route?
Response: MPAB mentioned that given existing approach are struggling to achieve results; it was more important to use an effective approach even if it takes longer. Similarly, better to spend more money and achieve some results than to spend less more and struggle to achieve results. A more considered response to this question is that the types of impact challenges that we are facing – poverty, food and nutritional security, environmental sustainability – that are systemic in nature. These challenges are not amenable to resolution by conventional technology transfer and component innovation approaches, but need system research and innovation approaches that are adapted to the complex systems nature of these issues. In this sense, in the long run, these approaches will be faster in resolving these challenges because they hold the promise of actually "getting the job done".

2. Gender and Youth (G&Y)

Presenter: **Jummai Yila, Focal Person**
IAC Observer: **Mariame Maiga**

Discussion Points:

Comments 1: IAC Observer commented **"**Thank you Jummai for this wonderful presentation. I must confess that I was impressed since the first day of the meeting by the way gender and youth dimensions have been addressed in the program, specifically in technology generation and deployment process as supported by key and needed gender studies. The CRP-GLDC recorded key gender actions such as capacity development in gender-responsive breeding along gender-based traits studies conducted; women and youth benefitting from M.Sc. and Ph.D. programs; GLDC youth strategy development with a lot of gender research conducted, seed revolving fund and nutrition curriculum development etc., and a lot of publications. The CRP-GLDC succeeded to be gender-responsive and I would like to congratulate the various teams and the management for making this possible. However, we need to see how to push all these achievements forward when the program ends so as to achieve better sustainable gender impacts of the program".

Question 1: I wonder how are you going to push forward the ongoing activities when the program ends? How can we sustain the impacts of the GLDC after the end of the program as far as the gender impact is concerned?
Response: My Colleagues and I in the Gender and Youth cross-cutting theme are delighted for the support of the CRP-GLDC Management and collaboration of colleagues across the FPs. The team is working with other collaborators in the CGIAR to the extent possible. For now, we are working closely with the GENDER PLATFORM. We have just concluded an international conference on '*Cultivating Gender Equality'* in which the Gender Scientists contributed up to five papers drawn from GDLC work at the conference. Aside from the CGIAR, the team in WCA is partnering with other organizations like the World Food Program through which the mapping of 30 economic zones in Mali is designed. To the extent possible, the team will continue making use of the progress achieved, the tools developed, and collaborate far and wide with relevant organizations/institutions.

Comment 2: We fully agree with you that we should build up partnerships to facilitate the continuity of GLDC impacts. Some key areas we can put more emphasis on amongst are:

(i) Inclusive scaling of GLDC technologies; we should up-scale and out-scale to ensure access, adoption, and deployment of GLDC technologies to reach as many low-income small-scale farmers, the underprivileged local groups along the value chains. I believe this will help us to ensure the greatest impact of the program.

(ii) Inclusive setting of the technology goals with gender-responsive communication strategy is needed; meaning that GLDC communication should consider gender-responsive strategies such as rural broadcast, video-based gender-sensitive communications, and extension services.

(iii) Outreach activities to disseminate technologies with the translation of some key information around the use of technologies into local languages whenever appropriate. Thius would enable the socially marginalized groups like the illiterate and people living in remote areas to know and learn the impacts of our technologies and take advantage of. This means that we should use the communication tools that can facilitate access to information and technologies. Communication matters here; the way we communicate GLDC technologies is very important.

(iv) Capacity development of women and youth in the development of agribusinesses in GLDC improved technologies for socio-economic empowerment of women and youth. For example, the training on small-scale seed business development, post-harvest handling, and market techniques of groundnut varieties in Mali; such initiatives need to be scaled. Besides, the gender-sensitive initiative of mapping of 30 women economic interest groups and women processing zones that Jummai mentioned in her presentation has to be put at scale to broaden the impact of the program when it ends.

These are the best ways to showcase the contributions of GLDC in closing the gender gaps in agriculture in the implementing countries with impacts of the program in poverty reduction, nutrition with diets, natural resource management, and income in agriculture when we explore opportunities for continuity as the program ends.

Comments 3: You mentioned that traits with negative implications deserve more attention in the breeding program, but in your product profiles at the beginning of your presentation, it was seen that the traits that breeders look at and the farmers look at may not be the consumer traits. You did not feature traits like taste, texture, storability, none of the post-harvest traits were there and I am guessing I know why, this is not right; People need to eat these products. I know that the Excellence in Breeding (EiB) platform has started to put consumer traits there so that there's a consumer pool of the products, because if we breed the high yield, pest resistance, diseases, and drought resistance, and it tastes appalling, it won't get taken up.

Comment 4: Maybe Jummai can say yes or no; the focus of breeders is on productivity in the field, often by men and the post-harvest traits are left out. Am I wrong in assuming this? **Response:** You are right. And I will add that there is a side of productivity or yield increase that is not fully understood, and breeders need to look at. Productivity to us and most of the smallholder farmers often focuses on grain yield and the number of yield increases. However, when we ask the processors or consumers, they look at the amount and quantity of flour yield that comes from cultivars that give higher flour yield. So for them, productivity is an increase in the amount or yield of the end-product, not just the harvested grain. These are some of the issues that need to be understood better if we evaluate the traits preferences of various stakeholders, not only of the farmers.

3. Capacity Development (CapDev)

Presenter: **Bastian Mueller, CapDev Team Member**
IAC Observer: **Uma Sah**

Discussion Points:

Question 1: In view of the achieved impact and necessary impact assessments, do we know what impact the different capacity building activities had on the beneficiaries and how we measured that? **Response:** We initially intended to send an impact assessment to previous trainees, not just within the CRP-GLDC but also ICARDA. Before that we wanted to import previous trainees into the MEL platform, which has not been achieved, yet. We did however draft a possible questionnaire for participants. We intend to send out this questionnaire before the end of the CRP.

4. Monitoring, Evaluation, Learning (MELIA)

Presenter: **Enrico Bonaiuti, Focal Person**
IAC Observer: **Etienne Hainzelin**

Discussion Points:

Comment 1: The MEL platform will also need to focus beyond box-ticking exercises, and reporting indicators. It will also need to develop towards facilitating learning based on captured information to fed into succeeding processes, and portraying impact of research or development initiatives among others.

Question 1: What happens to the MEL platform (as a tool) beyond CRP-GLDC?
Response: With more and diverse clients, MEL will operate on engagements with new and ongoing projects and programs such as PRIMA Foundation (https://hdl.handle.net/20.500.11766.1/e51ee7), FAO small-scale fisheries program, and National Systems until 2028. This will allow to maintain the existing investment while CGIAR will redefine the process for performance measurement.

Question 2: What happens to the MEL platform operations (systems and approaches) beyond CRP-GLDC?
Response: Existing work is being undertaken in the MEL platform to improve the reporting process beyond mere uploading of evidence and completing deliverables. The MEL team is rethinking ways to report indicators within the theory of change, e.g. to which innovation does this publication contribute to; where does this innovation sit in contributing to high level result? In the One CGIAR and beyond, there should be more emphasis on making assumptions more explicit as this is the only avenue to test them, correct proactively program activities and properly conduct evaluations.

The interactive session was concluded with closing remarks by the Chair, DG/ICRISAT and Director, CRP-GLDC. They thanked the presenters and congratulated them for their efforts, achievements and progress made in their respective flagship program and cross-cutting themes during the tenure of CRP-GLDC and wish the team well for their future endeavours.

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Annexure-II

During the 6th IAC meeting held on 15-16 October 2020, IAC recognized the good progress made by the different FPs and the cross-cutting themes and made three recommendations to the GLDC team as a way forward to 2021 and beyond:

1. **IAC considers that GLDC should develop several outputs between now and the first quarter of 2021** to ensure that One CGIAR takes cognizance of the results as the new research strategy is formulated. These outputs would include the three following papers, to be developed in a coordinated way:

    i. Agri-food system *vs* Food Systems Approach: A short paper that clarifies why we think use of the concept of 'agri-food system' (agricultural and food systems in interaction), is more appropriate under the circumstances, how it relates better to FSA and to One CGIAR strategic direction. This should be built on the cross-cutting MPAB experience, but endorsed consensually by GLDC, so the other FP leaders should contribute and possibly co-author this document.

    ii. Build a deeper body of evidence and develop a paper on agri-food innovation: If GLDC is going to have a systemic impact on the agri-food systems of target countries it will be because the Theory of Change is something they can adapt and adopt as part of their agriculture development plans. A key activity for resourcing for the last period should be to define the nature of impact pathways in agri-food system innovation with an emphasis on how GLDC/ CGIAR research and its partners could engage with these pathways and what this would mean for both research practice and future research agenda. MPAB has already made a start collating evidence of the role of market demand in the promotion of GLDC crops and questioning in a recent paper the ability of the market alone to create incentive for GLDC technology adoption and to translate opportunities into inclusive and sustainable outcome for small holders. There is also learning from FP6 that can help. The GLDC should build on this to achieve a stronger body of evidence and develop a foundational paper on agri-food innovation to Drive simultaneously smallholder benefit, diet and environmental outcomes.

    iii. A short paper for internal purposes (e.g. final evaluation of GLDC) of the 'what if' case related to FP2 to make sure that insights from 'what could have been' from GLDC are not lost. MPAB could pull together its results, challenging some of the conventional wisdom on delivering equitable and sustainable products via the market. This would set out a different narrative of the possible transformations of agri-food systems through a mix of technology uptake, policies and practices to make sure the direction of these change processes targets specifically the smaller holder we wish to help. This would provide a different framing on how research generate changes for these targets as well as a synthesis of existing experiences of the programming designs and approaches that can be deployed to advance this perspective.

    iv. Communications and outreach to deliver outputs and outcomes during the last year: Consider a communication campaign, not just an event, to share significant insights and outcomes, including those mentioned above, based on a 'client' analysis as a basis for targeted communications on aspects related to GLDC outputs and outcomes.

    These papers represent a significant research - and possibly publication - agenda that would require a substantial budget. IAC recommends that GLDC find ways to support this agenda, including with the mobilization of the innovation fund.

2. **In FP3, and more globally in the CRP, IAC considers that there is a need to strengthen the assessment of the multiple benefits provided by the solutions and transformative pathways tested in GLDC, considering the whole cropping system and not limiting to a single technology.** This implies to identify and measure - in experiments, in surveys and in simulation - a set of sustainability criteria, which are then translated into measurable indicators. Land productivity (e.g. yield) is not sufficient and should be completed by efficiency analysis of other factors (water, Nitrogen, labour…) both in biophysical and in economic terms. Ecosystems services also offers a framework to derive some of these indicators that can be measured or simulated, although there may be a time dimension in most of them which is not easy to adDress on short term experimental or simulation studies. Some of these indicators are scale specific and others can be assessed across different scales (field, farm, landscape); some of them have to be assessed over time and for several years. The teams engaged in CRP-GLDC have the expertise to conduct this type of approach and to use it to design their proposals for future research programs.
3. **The IAC recognizes the current efforts of GLDC on gender and youth inclusion and engagement activities but recommends that these efforts should be integrated with activities to increased access by women and youth to improved technologies.** Adoption of improved technologies by women will result in greater impacts on their livelihoods. The GLDC members should also take stock of GLDC results on gender and use this information to prepare the future research portfolio of the program.

RESEARCH PROGRAM ON Grain Legumes and Dryland Cereals

CGIAR

Annexure-III

Work Plan 2021 for the implementation of the IAC Recommendations

List of deliverables planned in response to the IAC recommendations made during the online interactive session between the IAC Observers, FP Leaders and Cross-cutting Focal Persons held on 15 and 16 October 2020:

IAC Recommendation		Output/Deliverable	Timeline	FP/CC Leader	GLDC Center	Email Address	Mobile Number
MPAB							
1	Agri-food system *vs* Food Systems Approach: A short paper that clarifies why we think use of the concept of 'agri-food system' (agricultural and food systems in interaction), is more appropriate under the circumstances, how it relates better to FSA and to One CGIAR strategic direction.	**Perspective paper**. Working title: Clarifying the implications of an agri-food system perspective for new directions in the CGIAR	April 2021	**Andrew Hall**	CSIRO	Andrew.hall@csiro.au	+61 476852361
2	Build a deeper body of evidence and develop a paper on agri-food innovation	**Evidence:** 1. review report of FP6 experiences of	Evidence reviews: July 2021	**Andrew Hall**	CSIRO	Andrew.hall@csiro.au	+61 476852361

		market engagement. 2. Review of case studies of market engagement for GLDC crops. 3. Review of business development principles and enterprise funding approaches by commercial business development company **Journal article:** Working title: <u>Towards a new impact narrative for CGIAR research: concepts and evidence from GLDC</u>	Journal article: Dec 2021				
3	A short paper for internal purposes (e.g. final evaluation of GLDC) of the 'what if' case related to FP2	**Internal discussion paper**. Working title: <u>Reflections on the potential of engaging with systems change in agri-food systems.</u>	Jul-Dec 2021	**Andrew Hall**	CSIRO	Andrew.hall@csiro.au	+61 476852361
4	Communications and outreach to deliver outputs and outcomes during the last year	1. Development of a communication strategy for MPAB insights 1.1 Development of briefing notes, blogs and PPP slide decks based on reports and analysis	1# April 2021 2# Oct 2021	**Andrew Hall**	CSIRO	Andrew.hall@csiro.au	+61 476852361

		developed through activities 1,2 and 3 1.2 Virtual seminar/ mini workshop with senior CGIAR stakeholders to share strategic insights	3# Oct 2021				
FP3							
1	In FP3, and more globally in the CRP, IAC considers that there is a need to strengthen the assessment of the multiple benefits provided by the solutions and transformative pathways tested in GLDC, considering the whole cropping system and not limiting to a single technology.	Recognizing this the FP3 team have developed a multidimensional framework for assessment of farming system sustainability considering productivity, economic, social, environmental and human well-being. We plan to develop two manuscripts on Assessment of multi-dimensional sustainability at farming systems and landscape scale level and impact of system level interventions on its sustainability. We also plan to launch an open access online tool for farming system sustainability assessment.	December 2021	**Shalander Kumar and Quang Bao Le** (Each cluster leader will contribute while assessing impact of farming systems interventions at the cluster level.)	ICRISAT ICARDA (with ICRAF & IITA)		
Gender							

	The IAC recognizes the current efforts of GLDC on gender and youth inclusion and engagement activities but recommends that these efforts should be integrated with activities to increased access by women and youth to improved technologies.	• Gender gaps in adoption and production of legume and cereal varieties	March to November 2021	**Jummai O. Yila**	ICRISAT	j.o.yila@cgiar.org	+223 93007422
		• Contribute to case study on lentils in cross-CGIAR report entitled "GENDER-RESPONSIVE BREEDING: LEARNING FROM NOVEL INFORMATION ABOUT GENDER-DIFFERENTIATED PREFERENCES FOR VARIETAL TRAITS"		Dina Najjar	ICARDA	D.Najjar@cgiar.org	
				Almamy Sylla	ICRISAT	A.Sylla@cgiar.org	
		• Training of Women and Youths on Small-Scale seed business development, postharvest handling and marketing techniques of Improved Groundnut varieties in Mali		Jummai O. Yila	ICRISAT	j.o.yila@cgiar.org	
		• Behaviour change interventions designed to incentivize choice of improved varieties and quality seed of cereals		Almamy Sylla & Jummai O. Yila	ICRISAT		

		and legumes in place of 'informal sources' among rural women users • Market research data collected and utilized to define gender-responsive customer profiles and guide crop improvement priorities					