

Minutes of the 6th meeting (Virtual) of the CRP-GLDC Independent Advisory Committee (GLDC-IAC)

Date: 15 and 16 October 2020: 4:00-6.20 PM (IST)

[GLDC-IAC Meeting](#) [Interactive Session](#)

Day I: 4:00 to 4:35 PM 4:35 to 6:20 PM

Day II: 6:00 to 6:20 PM 4:00 to 6:00 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 May-Guri Saethre, Deputy Director General - Research for Development (R4D), IITA | Member (Represented by David Chikoye, IITA) |
| 3 | Dr Ravi Prabhu, Deputy Director General – Research, ICRAF | Member |
| 4 | Dr Jacques Wery, Deputy Director General – Research, ICARDA | Member |
| 5 | Dr Herve Thieblemont, Regional Seed Business Development Lead, Asia and Mekong region Director, Syngenta Foundation | Member |
| 6 | Dr Michael Battaglia, Research Director, Agriculture And Global Change, Commonwealth Scientific and Industrial Research Organisation (CSIRO) | Member |
| 7 | Dr Mariame Maiga, Regional Adviser Gender and Social Development, West and Central African Council for Agricultural Research and Development CORAF/WECARD | Member |
| 8 | Dr Jane Ininda, Head of Seed Research & Systems Development, AGRA | Member |
| 9 | Dr Geoffrey Heinrich, Senior Technical Advisor, Agriculture Livelihoods and Environment, Catholic Relief Services | Member |
| 10 | Dr Uma Sah, Principal Scientist (Agcl. Extension), ICAR-Indian Institute of Pulses Research (IIPR) | Member |
| 11 | Dr Kiran Sharma, Director, CRP-GLDC and Deputy Director General (Research), ICRISAT | Secretary, IAC |

Apologies

| | | |
|---|---|--------|
| 1 | Dr Jacqueline Hughes, Director General, ICRISAT | Member |
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The following agenda items were discussed:

1. Welcome and Introduction

Dr Etienne Hainzelin, Chair, welcomed the IAC members. He introduced Dr David Chikoye who represented Dr May-Guri Saethre from IITA.

The Chair opened the meeting and the meeting agenda was adopted by the IAC. He mentioned that the meeting was being held over two days. In addition to the IAC meeting, there would be an online interactive session amongst the IAC observers and FP leaders and Cross-cutting Focal Points spread over the two days. The Cluster of Activity Co-leads were also invited to attend the interactive session. The record of discussions of the interactive session is attached as annexure-I.

The minutes of the fifth GLDC-IAC meeting held on 15 June 2020 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 June 2020. The presentation covered the following topics:

- Performance Management Review by CGIAR Advisory Services (CAS) and its recommendations.
- Mid-term review of plan of work: COVID-19 Risk Impact Assessment.
- PoWB 2021.
- Endorsement of the IAC recommendation on increasing the time of Director, CRP-GLDC from 20% to 40% by ICRISAT Governing Board, effective from October 2020 (*IAC recommendation "an increase in the engagement of the director with focal points and partners. Given the reality of the ICRISAT DG and prospect of a new DDG (R), IAC recommends consideration of an appointment of a director with an increased time commitment (perhaps 40%)".*

Dr Sharma mentioned that 2021 being the last year of CRP-GLDC, Innovation Fund (IF) grant will not be implemented as done in the past. However, the PMU will invest the IF allocation in those high profile collaborative activities with partners which will have better chances of getting implemented by December 2021 so that the outputs are delivered on time and are reported in the annual report 2021. The IAC suggested to also utilize the IF allocation to promote the existing partnerships and to build new partnerships that can be strengthened further during the OneCGIAR phase (see recommendations).

3. AOB

a. Vacant Memberships

Dr Sharma apprised the IAC of the two vacant memberships and informed the members that DG/ICRISAT will contact the leadership of CIAT and IITA for nominations to the GLDC-IAC. Dr Devra Jarvis from Bioversity International (representing Bioversity, ILRI, and IWMI) had resigned from the IAC due to work commitments, and Dr May-Guri Saethre is no longer serving with IITA.

b. Renewal of IAC membership

The first IAC meeting was held in September 2018. Dr Sharma mentioned that the current membership of GLDC-IAC is for two years and is due for renewal. It was unanimously agreed and accepted to renew the existing IAC membership till December 2021 to maintain continuity as this crucial juncture.

c. IAC Observer for FP6

Dr Sharma mentioned that no IAC observer was assigned to FP6 due to the late integration of FP6 within the CRP-GLDC and suggested that the IAC nominate an observer. No specific observer was identified in the meeting, however, the IAC stated that any interested IAC member/s could act as observer/s to provide advice and guidance to FP6.

4. IAC Recommendations

During its meeting on October 15th and 16th 2020, the IAC had a chance to meet and interact with GLDC leaders and coordinators. IAC recognizes the good progress made by the different FPs and the cross topics and would like to express the following recommendations:

a. 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.

- b. **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.
- c. **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.

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 Points

Date: 15-16 October 2020

Day I: 4:35 to 6:20 PM (IST)

Day II: 4:00 to 6:00 PM (IST)

Venue: BlueJeans Video Conference

A special session was organised during the IAC meeting on 15-16 October 2020 to facilitate interaction between the IAC observers and Flagship Program (FP) Leaders and Cross-cutting (CC) Theme Focal Points. The meeting was also attended by the Cluster of Activity (CoA) Co-leads.

The FP leaders and CC Theme Focal Points made presentations to apprise the IAC members and the designated IAC observers of the progress made since November 2019 and update on the actions taken in view of the last IAC recommendations given in Annexure-2.

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: The original proposal sought a strong cross-FP interaction between FP1 and FP2. Now that we have the cross-cutting Markets and Partnerships in Agribusiness (MPAB) theme instead of FP2, what does FP1's interaction with MPAB look like at the moment?

Response: FP1's CoA1.2 on value chains, markets, and drivers of adoption has a natural connection with MPAB and actually has joint activities with MPAB in an effort to have a more coordinated body of work on markets and value chains from an agri-food systems perspective. Examples include the review of agri-food system interventions and value chains and the work on assessing the market opportunities associated with expanded GLDC crop utilization (e.g. sorghum beer in Kenya) and new policies such as Kenya's flour blending policy that requires at least 10% of underutilized crops (millet, sorghum and other similar crops) to be blended with the dominant maize flour.

Revision of GLDC Theory of Change (ToC)

Presenter: Michael Hauser, Theme Leader (MIND), ICRISAT

IAC Observer: Etienne Hainzelin and Michael Battaglia

Discussion Points:

As a special invitee to the interactive session, Michael Hauser, Theme Leader, Markets, Institutions, Nutrition and Diversity (MIND), ICRISAT, apprised IAC of the progress made so far in revising the GLDC ToC. The following proposed changes in the ToC were presented:

- One year before the end of the GLDC, it does not make sense to FP leaders to change the general structure of the ToC with its two main impact pathways, but it can be updated with better alignment of FP and better explicit assumptions.
- FP2 and FP6 to be situated in the middle of the ToC to support scaling and sustaining.
- FP6 could share lessons and experiences they have gained from PABRA with regards to scaling with other flagships as they (FP6) too learn from the original FPs. The FPs therefore need a more formal mechanism to share deeper learning and information across the flagships. There is opportunity to go beyond reporting to really learn from each other across the flagships in support of scaling and the post CRP arrangement.
- The updated ToC to be used to think of a post CRP strategy.

Comment 1: Brilliant and very synthesized, it is much richer and more convincing. You are working for the future; it may not be used this year but for next programming.

Question 1: You have improved a lot the ToC from the last perception, but you still have many things implicit; the process of the change in the arrows is not very explicit. Will it be needed to make the process explicit for the change in the arrows in a few sentences as you formalise a new ToC?

Response: The arrows implicitly communicate a theory enabling change which has to be spelt out ideally through assumptions. Since the CRP-GLDC was set up as a market oriented/demand led CRP, I would use the merits of FP1, FP2 and FP6 at least for the commercial side of the CRP on what we can learn from the common beans.

Question 2: In your interaction with the FPs, what common intelligence did you generate from the breeders, geneticists and agronomists about this new scheme?

Response: The new scheme, they are seeing it for the first time but we shall ask them for a response, it will be interesting to know what they think about it.

Comment 2: One year to the end of the CRP, there is an opportunity to take a look and say that of the original thinking that we had, how much is coming true and what are those areas that we have to really rethink.

Question 3: To what extent is theory of change leading to a change in theory, and what were the biggest insights you had from what has already happened and what you think can happen in the remaining time, if it is going to take more than a year and how does that affect the theory of change work beyond?

Response: a) certainly, I need to adapt the timeline, it takes much longer to generate outputs and to translate them into outcomes. b) The transition from outputs to outcomes is a change process and it would require additional activities, additional set of catalysers that do not fall in place. c) Surprisingly, many of the assumptions at the flagship level hold true, we will see what happens when we meet FP leaders next week whether this still the case. Overall, I believe the flagship arrangement was okay when we crafted it. We just didn't know that FP2 with a very critical important mechanism because with the market creation and the practical agribusinesses would not be funded. FP6 is an opportunity, although it currently stands alone, it needs good integration and there are a lot of positive responses on that issue.

Comment 3: I strongly recommend the updated ToC as an output of the CRP for the next programming. This is already a product of the CRP; it is good not to present it as an updated ToC after the CRP but as a product for the next programming of research. I hope you agree on that.

Response: I agree very much, the evidence that we have been collecting across all the FPs is suited to create a new output. We are writing a working paper to be a public good to give lessons to others about how we revised or updated the theory of change.

Question 4: You are proposing to revise the theory of change as an output without changing anything in the programme and what is the incentive for that?

Response: The incentive is the post CRP era that will start in 2022, to the question of the depth of the structural change, I would not go into a very deep structural change right now because of the time left to the end of the CRP.

FP3: Integrated Farm and Household management

Presenter: Jules Bayala, FP3 Leader

IAC Observer: Geoffrey Heinrich and Jacques Wery

Discussion Points:

Question 1: There is a lot of research activities going on but what are the 2-3 research lines and outputs you think are the most important?

Response: First, research on Sustainability indicators to help co-designing resilient farming systems and pest and diseases monitoring and forecast at spatial scale have a high potential for impact on the production systems. As a consequence, the paper on sustainability domains and indicators together with the online platform (dashboard) developed on the one hand and the decision support tool for pest and diseases forecasting on another hand are the most critical outputs that can lead to impacts.

Second, participatively validated decision support tools to co-design resilient crop-livestock integrated farming systems wherein FP3 team has worked with number of extension agencies (KVKs) and value chain actors in SA and WCA is another key output to support stakeholders' and innovation platforms members for scaling resilient farming systems.

In addition, our work has standardised and validated the use of remote sensing and climate analytics tools for supporting scaling climate resilient agriculture at large scale in SSA and SA.

Question 2: A lot of activities are there, but the integration at farm level, scaling and value-added are not obvious from the presentation.

Response: In essence, all activities in 3.3 are integrated. The sustainability covers five domains that need to be fully assessed in an integrative way. In addition, the findings from this work were used in designing integrated crop-livestock systems in SA and WCA using a USAID bilateral project. For the scaling we are capacitating stakeholders through co-designing so that they can be skilled to engage in the scaling activities. We are also trying to collaborate with big programs like TAAT of the AfDB and WAAPP of CORAF. We are also directly working with and building capacity of Extension agencies to use the decision support tools we have validated to promote resilient farming systems.

The lack of an agri-food perspective from the presentation stems from the fact FP2 has not been funded from the beginning. However, we have an activity on value chain of sorghum in SA and also the development of crop-livestock value chains in Niger and Burkina Faso.

Question 3: There is a need for advocacy for the NRM and integrated farming systems supported by dryland cereals and legumes in the One CGIAR system.

Response: Yes, agreed and our team has discussed and decided to produce a position paper on making the case of NRM/ FP3 outputs on integrated farming systems approaches into One CGIAR going forward by the end of this year or by early next year.

FP4: Variety and Hybrid Development

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

Discussion Points:

Comment 1: The IAC chair observed that the interaction between the FPs and cross-cutting themes and engagement with diverse partners is evident from the FP4's presentation.

Comment 2: The study on the 'drivers of adoption' for large-scale adoption (>90%) of improved legume cultivars in Myanmar, Bangladesh and India is interesting and it can guide legume seed systems in Africa. Documenting such studies and studying the models and drivers is very important. Jane asked to share the insights of the study, so far.

Response: FP4 contacted FP1 team to study these huge impacts to understand the driver of the impacts. Andy Hall shared the initial insights that include traits driving the adoption, as in the case of chickpea in India.

Comment 3: The commercialization of biofortified cultivars of GLDC crops is a significant output to address the malnutrition. It was suggested that policies and ecosystems are needed to promote the value chains of these varieties that result in enhanced economic benefits to growers besides the health benefits to the consumers.

Response: The policy changes in India for pearl millet and in Kenya for finger millet enabled the release of the biofortified cultivars. Other countries can put such policies in place required for release.

FP5: Pre-Breeding and Trait Discovery

Presenter: Rajeev Gupta, FP5 Leader
IAC Observer: Herve Thieblemont

Discussion Points:

Question 1: What is the timeline for these technologies to be deployed in breeding program or marketed. How about access of these technologies by private companies?

Response: FP5 is trying its best to deliver these technologies to FP4 ASAP. Some of the recent examples are RGT, QC panels, trait linked SNPs etc. that we will continue to pursue. Whatever we generate is IPG and anybody can use. In fact, some of SNP panels are already being used by private partners. There are synergic relationships; private partners contribute in kind, recent example where Corteva is generating gold standard genome assembly for 3 of our pearl millet lines.

Question 2: How do you ensure about working on demand driven traits in FP5?

Response: Traits we are working on in FP5 are based on the Product Profiles which are basically driven by demand from farmers. We also work on some long-term traits (~10 yr time) that are based on product profiles.

FP6: Common Bean for Markets & Nutrition

Presenter: Jean Claude Rubyogo, FP6 Leader

IAC Observer: Not assigned

Discussion Points:

Question 1: What is the relationship and interactions between FP6 and other FPs of GLDC or do you see mutual interests/complementarities between the FP6 and other FPs.

Response: There are a lot of learning points from both sides – for instance FP is a multi-disciplinary / integrated FP which connected market/consumers to the breeding and traits discovery supported by the use of climate smart agricultural practices. Therefore, FPs can learn from FP6 that is integrated – how the demand and market led research has and still sharpening the update of bean based technologies and contributed to the upgrade of bean value chain and bean based food systems? For Instance, MPAB led by Andy Hall and FP6 are interacting to develop an evidence base on how research has shaped the bean agri-food systems. This will use case of beans under the Pan Africa Bean Research Alliance (PABRA) experience. This will support learning of other FPs and commodities under GLDC and beyond.

Question 2: Does FP6 integrate agronomy, in addition to the work on bean breeding?

Response: Actually there are more disciplines in PABRA. FP6 equally focuses on beans improved productivity and market. Therefore, is FP6 is highly integrated.

Cross-cutting Themes

Markets & Partnerships in Agri-Business (MPAB)

Presenter: Andrew Hall, Focal Point

IAC Observer: Ravi Prabhu

Discussion Points:

Question 1: What is the difference between a food system and an agri-food system?

Response: The differences are largely semantic, although different bodies of literature tend to provide customised definitions to support arguments being made. The term agri-food system is increasingly use to frame discussions of transitions in these systems where issues of political economy are critically important. Agri-food system also encompasses the non-food dimensions of agriculture (fibres, energy) and recognises that changes plays out on a broader landscape of rural based social and economic activity.

Question 2: What is the audience for finding that suggest theory of how change takes place through engagements in markets and agri-food systems transformation?

Response: Like FP 2 and indeed the whole of the CRP, the spirit of the work of MPAB has been to explore the feasibility and advance a different way of organise for the transformation of agri-food systems. The primary audience of MPAB is, therefore the CGIAR and how it engages with market based opportunities. This topic is obviously of equal importance to national programs and indeed CSIRO, as a national science agency grapples with the issue of how partnership with the private sector can be leveraged for public good outcomes. Donors are also a target for MPBA outputs, as it donors that to greater or lesser extent set the contours for what sorts of research are prioritised and which approaches are viewed favourably in funding applications.

Question 3: The work of MPBA, in some sense makes you a heretic, challenging conventional wisdom in the CGIAR on how impact takes place? Has your challenging finding and heretical views

got in the way of integrating your work across the flagships? Do words like “political economy” not frighten other CRP colleagues?

Response: Quite the contrary. What is perhaps interesting is the way, for example FP4 breeders have approached us to see explanation of unusually high rates of varietal adoption. We have specifically asked them what they want from us on this topic and they indicate that they want an explanation that holds lessons for scaling and express the diagnostic limitations of conventional impact study approaches.

Comment: A paper should be written on what would have happened if there had been an FP2.

Response: There wasn't time for a deep discussion on that idea. My reflection is that imagining an FP2 is not quite the way to go. Rather pulling together the parts of a new impact process story that is coming out of MPAB, challenging some of the received wisdom on delivering equitable and sustainable via the market, setting out a different narrative of how transforming agri-food systems can be leveraged to speed technology uptake and the policy and practice mixes need to make sure the direction of these change processes targets specifically the smaller holder we wish to help. My vision of this is a contribution that both provides a different framing to guide engagement with these issues (a different narrative of how change takes place) as well as a synthesis of existing experiences of the programming designs and approaches that can be deployed to advance this perspective. As mentioned in the presentation, we have parts of this story. A concept note has been requested by the programme office to explore the experiences of FP6 and the business incubation practices of the African Enterprise challenge fund. The final year of MPBA will focus on ensuring a robust evidence base for authoritative statements on these new directions and opportunities for the CGIAR (and other R4D inventors and planners). This will require concerted intellectual endeavours and significant outreach efforts to ensure that these perspectives are well articulated and sufficiently socialised in key decision making bodies.

Gender and Youth (G&Y)

Presenter: Esther Njuguna-Mungai, Focal Point

IAC Observer: Mariame Maiga

Discussion Points:

Comment: It's key to focus on Gender Gaps in Research and Development agenda, which is important for guiding the approaches we adopt in deployment of technologies. Business development and engagement of women and youth is critical for the GLDC value chains.

Question 1: Overall, how many women and youth are targeted by the GLDC activities? How many are being tracked in the MLE systems to demonstrate progress?

Response: This number will be consolidated for the next presentation, especially the women and youth tracked. The proposal I think targeted at least 30% women but will confirm – Advised the Gender Team to prepare for this question next year.

Question 2: Are women involved in the development of the product profiles?

Response: Yes, the women are involved in development of the product profiles. The work that Dr Jummai Yila is leading in WCA is looking at this question specifically. There are ongoing discussions with the EiB team on the best ways to work with women on these questions and several tools have been discussed.

Capacity Development (CapDev)

Presenter: Thomas Falk, Focal Point
IAC Observer: Uma Sah

Discussion Points:

Comment 1: The numbers on capacity development beneficiaries in MEL seem incorrect and we need to make efforts to improve data quality.

Response: I express my full agreement with this concern. It would be highly inappropriate for our group to now start a new parallel reporting process. The solution to this therefore, to encourage all GLDC partners to consequently report on their capacity development efforts in MEL.

Comment 2: We should strive to fill our learning platforms with content.

Response: I express my full agreement and highlighted that this will be in the center of our 2021 work plan.

Comment 3: It was proposed to follow up with beneficiaries of GLDC capacity development and find out how the support has helped them in their professional life.

Response: I responded that this is a very relevant idea and it has been discussed in the Task Force. I emphasized that I cannot raise too high expectations as this might become a larger effort and possibly beyond what the Task Force can achieve with the given resources.

Monitoring, Evaluation, Learning and impact assessment (MELIA)

Presenter: Enrico Bonaiuti, Focal Point
IAC Observer: Etienne Hainzelin

Discussion Points:

Question 1: Capacity Development Data reported so far is low. How to improve the reporting?

Response: Accuracy of Data. Following the CapDev presentation we briefly discussed aspects that could ensure we report more about our activities. One solution is to provide quarterly update by FPs in order to stimulate a verification from FP leaders and better contribution from Activity Leaders.

Question 2: Can you provide more details on the activities you implement to address the “L” in MEL?

Response: Learning and Contribution to One CGIAR. The activities around learning are important to ensure broader impact and informing CGIAR Agenda. Suggested approaches are to promote more Webinars, synthesis and communication of results and feedback to be provided to the CGIAR across CRPs.

The interactive session was concluded with closing remarks by the Chair. He thanked the presenters and congratulated them for their efforts, achievements and progress made in their respective flagship program and cross-cutting themes.

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.

Recommendations from 4th IAC Meeting held in November 2019

1. Recommendation on GLDC operational update

IAC recognizes the good progress of the different FP and cross topics and would like to:

- Recognize the challenges, but also the need for on-going effort, to maintain rich and productive interactions between FPs, and recommends that the progress towards the added value of the CRP-GLDC in fostering these interactions is documented.
- Call for more engagement, creativity and proactivity from cross-cutting topics leaders and to mobilize resources to embed activities within and to catalyze outputs from FPs.
- Bring to attention the necessary good interactions and scientific synergies between GLDC mapped initiatives (AVISA, EiB, etc.) and other partners' projects (NARs, NGO, private sectors,...).
- Ensure that the added value of the CRP-GLDC in generating cross-cutting interactions is captured, and that reporting provides balanced information from centers and partners; this would be enabled through better activities mapping and better quality information in MEL.
- Suggest that the CRP-GLDC articulate the differentiating attributes and benefits of its multi-crop nature: with regards 1/ added value to each crop breeding and 2/ the added value to system improvement. The IAC recommends consideration in the next POWB.

2. Recommendation on the impact evidencing strategy

IAC acknowledge the good work made by the FP1 on GLDC evidencing strategy, and the proposed key messages for designing an impact evidencing strategy:

- Recommend making more explicit what remains implicit in the GLDC theory of change, so the evidence collected can form a more coherent picture, based on the 7 impact "nodes".
- Go ahead with tackling evidence gaps and explore the hypothetical causal mechanisms playing in the impact pathway, in connection with MPAB.
- Not to focus too much on the adoption node, which might be the easiest, and explore the other nodes, more complex (poverty, diets, environment and resilience); For this, we recommend to a wider literature review, not limited on the GLDC species.

3. Recommendation about GLDC situation arising from the CG reform

IAC recommends that CRP-GLDC be proactive in keeping momentum and capital (partners, experience ...), in particular by:

- Paying greater attention to scientific partners, specially embarking NARS in knowledge production and capacity strengthening.
- Building up whenever possible partnership with development institutions.
- Keeping research programming diversified, and opening more space for system and landscape approaches.

4. Recommendation about GLDC management

IAC recognizes the need of continuity of leadership until the end of the CRP-GLDC, and recommends an increase in the engagement of the director with focal points and partners. Given the reality of the ICRISAT DG and prospect of a new DDG (R), IAC recommends consideration of an appointment of a director with an increased time commitment (perhaps 40%).