



RTB Workshop Report

Report of the virtual RTB ISC Annual Meeting 2021

THE GRAND FINALE

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The CGIAR Research Program on Roots, Tubers and Bananas (RTB) is a partnership collaboration led by the International Potato Center (CIP), implemented jointly with the Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT), the International Institute of Tropical Agriculture (IITA), and the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), that includes a growing number of research and development partners. RTB brings together research on its mandate crops: bananas and plantains, cassava, potato, sweetpotato, yams, and minor roots and tubers, to improve nutrition and food security and to foster greater gender equity especially among some of the world's poorest and most vulnerable populations.

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Disclaimer:

This RTB Workshop Report is intended to disseminate research and practices about production and utilization of roots, tubers and bananas and to encourage debate and exchange of ideas. The views expressed in the papers are those of the author(s) and do not necessarily reflect the official position of RTB, CGIAR or the publishing institution.

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Report of the virtual RTB ISC Annual Meeting 2021

The Grand Finale

7 -9 July 2021

OBJECTIVES

- Progress by flagships shared with Independent Steering Committee (ISC) and RTB community
- Reflection of RTB achievements and challenges
- Contribute to the transition to One CGIAR with collective knowledge assets
- Consolidate lessons learnt for implementation of new initiatives

PARTICIPANTS

ISC and Management Committee (MC) members, flagship project leaders, cluster leaders, gender researchers, other key researchers in clusters, center focal points, Program Management Officers (PMOs), Program Management Unit (PMU), key partners.

ORGANIZATION

Three parts:

- **July 7th**: presentation by RTB and Flagship Project (FP) leaders of achievements (incl. 2020-2021 achievements, golden eggs and transition activities). Feedback provided by ISC Members.
- **July 8th**: presentation by FP leaders of achievements (incl. 2020-2021 achievements, golden eggs and transition activities). Feedback provided by ISC Members.
- **Closing remarks.**

We highlight here the collaborative work RTB has done in its final year while planning the way ahead, and updating progress with the Golden Eggs and other collaborative assets that will help to ensure a smooth transition to the One CGIAR.

DAY 1 – JULY 7TH

PROGRAMMATIC UPDATE AND PROGRESS BY FLAGSHIP

Graham Thiele (RTB director). See presentation [here](#)

CAS review. This [favorable review](#) said that RTB was effective, and delivered high quality science. The golden eggs were highlighted and subsequently the concept has been mainstreamed across the CGIAR.

Transitioning to One CGIAR. The RTB golden eggs relate to the three action areas: systems transformation, resilient agri-food systems and genetic innovation. The CGIAR has picked up on the golden eggs concept. We have new [golden eggs](#) on [priority setting, in situ](#)

[conservation](#), and some in the pipeline like [Tricot](#) and [incorporating quality traits into the breeding pipeline](#).

Genetic Innovation Action Area The initiatives show strong linkages. We highlighted the clusters of thematic levels where RTB has the clearest mapping. E.g. RTB has 129 of the 260 staff involved in genetic innovation, in six centers.



Market intelligence and product profiling initiative. We had a hackathon, [G+ tools](#). Vivian Polar is the co-lead for this initiative. We have 50 product profiles completed.

Initiative on farmer preferred varieties. [Tricot](#) is a citizen science approach to use the power of numbers, reaching many farmers with three technologies to test. You can test many varieties with many farmers. This is another golden egg. Also, can include RTBfoods, with CIRAD, which enables breeders to select for quality traits the breeders really need.

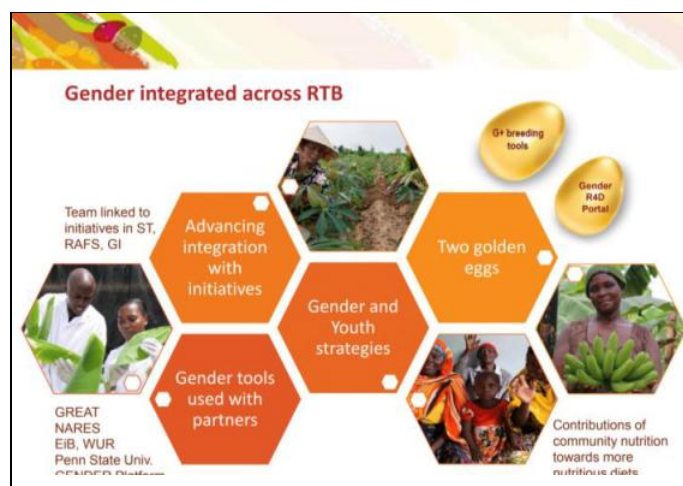
Initiative with seed delivery features the RTB Seed Systems Toolbox with 11 tools. It has a dedicated website. We had a launch and have received interest from donors to set up an African center for excellence. It is an important golden egg, sitting in the One CGIAR. We have a task force for this already.



Resilient Agri-Food Systems is an action area.

Initiative on global plant health. Initially plant health was a bit neglected in One CGIAR, but it is important in RTB crops. We have a group FP3 working on this. We prepared draft ideas for this draft initiative. This initiative can feature the digital alliance for plant protection.

Gender. Gender is integrated across RTB, with strategic gender research, while integrating gender onto the technical work on the ground. We linked with GREAT, NARES, EiB, Penn State, and Wageningen. Gender has two golden eggs: [The G+ breeding tools](#), and a [portal for gender](#).



Communication. RTB encourages scientists to contribute to our regular blogs that highlight our partnerships.

We have blogs on banana breeding, scaling, thriving with complexity, and an amazing one on the yams of Konguan. New portals have been launched, with a landing page for golden eggs. We have the portal for tools for seed system, and for gender, which are part of our golden eggs and all are on our website.

We had an amazing month with Agrilinks. We published 17 blogs, which have had 5000 views. We had a well-attended webinar on RTB contributions to food security. Our final stakeholder report should be published soon, and we have some great stories there.

Critical issues. All of these activities are going on in spite of Covid. We are bringing some of our reporting a bit early to delivery by the end of 2021.



The golden eggs and catalog are part of our transition to One CGIAR, as is our book with Springer “Root, tuber and banana food system innovations”: 17 chapters on diverse topics. This will be sent to the publisher in August.

We are increasing our support to the new initiatives. Our team members are helping to build it.

We have a transition plan to One CGIAR. This meeting is part of that closeout plan. There will be continuity of W1 and W2 staff. The steering committee is committed to supporting some topics that are at risk.

Discussion, overview

OFSP is an outstanding area of work, although not one of our golden eggs because it’s a single center innovation. Let’s see how we can feature this and similar innovations in the transition.

We have to distinguish between those things that we want to continue into the One CGIAR, such as the golden eggs, and those that we just want to capture for posterity and to make sure the record shows their achievements.

There have been great advances in breeding, with genomics. If the breeding teams can see how to articulate the cross-cutting nature of those, it could be a golden egg.

We need to create a strategy to keep the websites and portals open after RTB closes.



PRESENTATION ON FP1. ENHANCED GENETIC RESOURCES

Luis Augusto Becerra (FP1 leader). See presentation [here](#)

Next steps

Our golden eggs include the use of genetic resources, in situ conservation. Our golden eggs will interact with others. We need to improve metabolomic databases, but also need to safeguard genetic gains, and others.

Discussion, FP1

Feedback from ISC

1. Flagship contributions towards expected outcomes. Slide 18 reflects a limited number of initiatives at Stage 1. Is the release of 5 varieties in Nigeria just one Stage 4 event, or is it 5 different events? There is little mention of digitization of breeding programs with the exception of slide 6. Given the Covid shock during 2020, there should have been a paragraph on what was planned for the year vs what was actually achieved. Need to clearly state why the specific research projects were carried out and, and why it is important that they be continued in the One CGIAR.



2. There is no mention of new partnerships formed in 2020. Which partnerships must be nurtured in One CGIAR? Research outcomes achieved through partnership are still missing.
3. High-quality, cutting edge scientific results were achieved, especially re understanding genetic diversity and progress in genome editing.
4. Gender. Still need to explain: a) progress towards gender equity within RTB; b) inclusion of gender throughout FP1 research agenda.
5. The path towards One CGIAR transition is not clearly explained.

Specific questions:

What would it take for breeders to make a more intense use of the genetic diversity in gene banks? Would it require greater efforts in characterization, evaluation, gene mining, etc.? RTB crops are some of the most challenging for germplasm collection, preservation, characterization and use. With all the new molecular and gene technologies, are we closer to defining a new paradigm in terms of collection, preservation and use of germplasm?

On-farm conservation is the only way to ensure the continued evolution of RTB crops; do we have a proposal?

Product Profiles, great progress. Has there been a comprehensive inclusion of the target audience (poor farmers and consumers)? How would the preferences determined by market intelligence studies be integrated into the product profiles and into the breeding programs?

Genome editing, great work in bananas. The yam work is too preliminary to be an output.

Metabolomics. Should have a clear pathway on how the research outputs would enable more efficient and impactful RTB breeding.

Haploid inducer in cassava is a great concept; however, we need to consider that the technology worked in maize about 60 years after intense inbreeding and selection started. Meaning that the populations subjected to double haploidy had a low charge of deleterious recessive alleles. Chances are double haploids from highly heterozygous cassava genotypes might be lethal or sterile at the end.

Innovation and progress in FP1, how do we solve this going forward? Is excellence in agronomy the answer? The goal of breeding should be to optimize the Genotype x Environment x Management (including processing). RTB research into the future needs to fill this void.

Response from FP1. All your comments are spot on. We are aware of those challenges with the RTB activities. For the division into four centers, we tried to align different research approaches into a coherent platform. Innovation is a difficult investment We had a wide range of partners with different needs and levels of development in the innovation pipeline. How many activities were planned and how many were achieved, we went through the Covid period. This was a challenge, coordinating this across three continents, working with groups with different restrictions, and the communication itself. We used to profit from our face-to-face meetings, which we couldn't do during this past year. We managed to do 75 to 80% of what was planned. There is a lot more to do. We are producing new innovations and new ideas.

The gender work is difficult. We struggled for years how to find the angle, where gender research would add value to the process of innovation, to find out how gender would contribute. We managed though consumer preference. Gender has been a big contributor to conservation. Not just profiles. The product profile area has really developed until we can say it's almost a final product, even though we have a lot to do. We have pioneered and championed the discovery of how to value genetic resources and how important it is to manage them using the technologies, using the crop knowledge. I agree with you about the decision-making processes, and as we move to One CGIAR, hopefully this idea will solidify as we implement the new research portfolio. There are relationships that we built across, we haven't listed all of them because it's very dynamic, and the ones in the slides have been the long-lasting ones. The ones that we see moving into the new program will be really

important, especially the one on metabolomics is a great area. It has been a big payoff for RTBs.

Other discussion. There has been huge contribution from IITA through Leena Tripathi with a platform for banana and for genome editing which should also be mentioned, including work on *Xanthomonas* wilt, and on banana streak virus. There is a lot of product development through genetic editing and genetic engineering, e.g. on editing genetic material so it is free of foreign genes, so it can be considered non-GMO, to use as a breeding line.

Germplasm is an important part of CGIAR, and Flagship 1 is based mainly on this germplasm. It will continue to be a big part of One CGIAR. Some programs will continue to use it. The breeder wants to come up with a product that contributes to agricultural sustainability.

In the seed initiative, there will be a work package on clonally propagated crops. That reflects on the concern from Carlos that crops don't seem to feature prominently. RTB crops need to be included in this work package.

PRESENTATION ON FP2. ADAPTED PRODUCTIVE VARIETIES AND QUALITY SEED

Maria Andrade, see presentation [here](#)

Next steps

There is a lot of potential to use the Seed System Toolbox in the One CGIAR. We also have genetic innovations, resilient food systems, RTB varieties and Tricot. We are looking at the challenges and the demand of partners to have an impact on improving nutrition and food security.

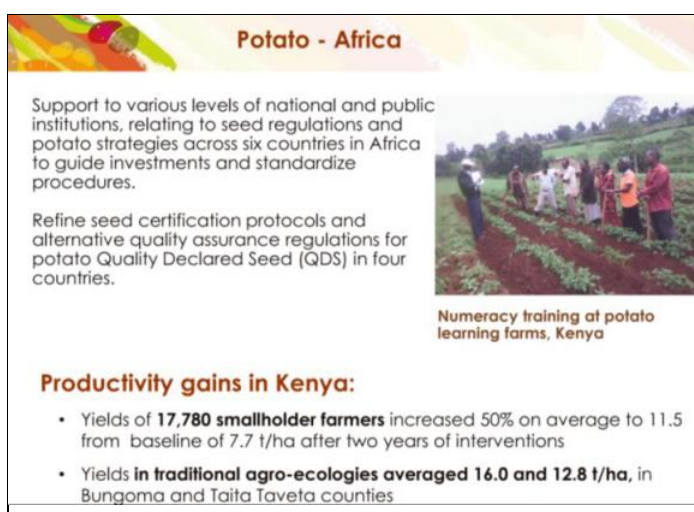
Discussion, FP2

Feedback from ISC. There are some weakness and inaccuracies in the information provided, for example. FP2 reports a 50% increase of yields from 50% 7.7 t/ha to 11.5 from after two years of interventions. Is this increase due solely to the change in varieties or also to crop intensification (e.g. fertilization, weed management)?

Response from FP2. The yield increase is due to using good seed and farmer training among the beneficiaries based on baseline and endline studies over the project period (2 seasons).

Feedback from ISC. You said: Yields in traditional agro-ecologies averaged 16.0 and 12.8 t/ha, in Bungoma and Taita Taveta counties.

Response from FP2. This is based on yields selected farmer groups reported in a single season – following the endline study.



Potato - Africa

Support to various levels of national and public institutions, relating to seed regulations and potato strategies across six countries in Africa to guide investments and standardize procedures.

Refine seed certification protocols and alternative quality assurance regulations for potato Quality Declared Seed (QDS) in four countries.

Numeracy training at potato learning farms, Kenya

Productivity gains in Kenya:

- Yields of **17,780 smallholder farmers** increased 50% on average to 11.5 from baseline of 7.7 t/ha after two years of interventions
- Yields in **traditional agro-ecologies averaged 16.0 and 12.8 t/ha**, in Bungoma and Taita Taveta counties

Feedback from ISC. Is this increase due solely to the change in varieties or also to some intensification of cultivation techniques (fertilization, weed management)?

Response from FP2. Due to using good seed and GAP training on farms

Feedback from ISC. In slides 12 and 17: Yam seed production and availability. No information on the supposed higher performance of improved varieties.

Response from FP2. The yam varieties promoted included are higher in yield (>20 tons per ha under optimum conditions), higher in dry matter content (>25%), tolerant to disease (yam mosaic virus for rotundata and yam anthracnose for alata) and acceptable quality for boiled and pounded yam.

Feedback from ISC. For Triple S, there is confusion between demonstration rate (scaled to 57,655 farmers) and actual adoption. Does the project provide additional services to farmers (transport of materials, water supply, etc.) that may not be sustainable after the project ends?

Response from FP2. The project provides only training. The sweetpotato going onto Triple S is grown by farmers.

Feedback from ISC. Are the 57,655 smallholders those who have seen the demonstration or the ones who have adopted?

Response from FP2. We are only disseminating the technology with training in the field, using videos. Adoption of Triple S will happen after a good introduction. SPIA project is about to conduct an adoption study in Mossurize, in Manica province, Mozambique.

Feedback from ISC. The impact of new technologies (improved varieties, seed system) at the farmer level should be evaluated independently (not by the project that introduced these technologies) and after a certain period of time, once the project intervention has ended. If this is not the case, it is difficult to assess the real level of adoption of these technologies.

Response from FP2. Agreed.

Feedback from ISC. There should have been more mention of the partners. Besides TOSCI in Tanzania and PPRSD in Ghana, what about other NARES, farmers/women organizations, Universities, ARI? How have the partners have been involved in choosing the activities within the FP?

Response from FP2. All partners were carefully chosen based on their unique expertise. As can be seen from the publication list. The partnerships were all very successful.

FP2 expanded and strengthened partnerships with national programs and government ministries in Cameroon, Kenya, Nigeria, Uganda, Rwanda, and Tanzania on RTB crop seed systems, and variety release. Public-private partnerships were established for clean cassava seed production in Cambodia and Lao PDR, potato seed production in Ethiopia, potato seed framework and value chain development in Malawi and Assam (India), as well as in the area of breeding with NAROs and universities in Assam, and Bangladesh.

Technical backstopping and breeding support are provided to FP2 by James Hutton Institute (yam), HZPC (potato), IPK Gatersleben (population hybrid breeding program), and DSMZ (cassava).

FP2 also maintains strong collaboration with the University of Florida, EiB and BTI in the area of bioinformatics for breeding. In partnership with a private company (IDS GeoRadar)

FP2 is developing a ground penetrating radar for nondestructive estimation of cassava root yields. Next generation sequencing of breeding stocks and genetic study population IBRC (Iwate Biotechnology Research Center), Japan and the Institute of Experimental Botany, Czech Republic (plantain reference genome) and phenotyping was done in partnership with KULeuven.

Activities in the field of policy assessment and development of recommendations and technical advices on seed policies and regulations are being implemented in close collaboration with RTB teams in Clusters CC2.1 and CC3.1, ISSD (KIT/WUR), Swiss Development Cooperation and PIM piggy-backing on larger W3/bilateral grants: BASICs (Nigeria), SweetGAINS (Tanzania and Uganda), BEST (Tanzania), and YIIFSWA-II on yam projects funded by BMGF; Seed Tracker funded by Google Fund; and the CASS and IFAD-funded CBSD control projects in Burundi and Rwanda.

Responding to the cassava mosaic virus outbreak in Southeast Asia, CIAT-led cassava seed system research in Southeast Asia is nested within the ACIAR-funded regional project: Sustainable cassava disease solutions in mainland Southeast Asia.

Continued collaboration with RHUL contributed in building a solid information base on RTB crop metabolomics that is complementing genomics, transcriptomics and proteomics databases.

Feedback from ISC. A list of publications would have been useful, to show high-quality scientific results.

Response from FP2. There are the tools and the users guides for the seed system toolbox, over 20 peer-reviewed publications, and various manuscripts in press. (Editor's note: Andrade provides a list in her written comments, omitted here because of space limitations).

Feedback from ISC. Could you explain what would be the outstanding scientific areas where FP2 has progressed over the past 3 years?

Response from FP2. Adapted Productive Varieties and Quality Seed of RTB crops progressed in many areas. A few include: the development of the [RTB seed system toolbox](#) (a golden egg), which is transitioning into One CGIAR. Cassava flowering-inducing technology. Support to various levels of national and public institutions regarding seed regulations and potato strategies across six African countries to guide investments and standardize procedures. Refine seed certification protocols and alternative quality assurance regulations for potato Quality Declared Seed (QDS) in four countries.

Gender is explicit in the work on OFSP, but there is no evidence in other crops or topics. Could you explain how gender has been taken into account in other crops and themes?

G+TOOL for gender responsive breeding. This discovers the traits that different groups of customers (stakeholders) prefer in different crops, i.e. the varieties farmers prefer to plant, that consumers want to buy. Gender is mainstreamed in the toolbox, rather than designing a specific gender tool. The gender work is documented in our publications, e.g.: gender and seed systems (Nkengla-Asi et al. 2020). Using concepts from the multi-stakeholder framework, Mulugo et al. (2020) found that gender had a significant effect on the uptake of high-quality banana planting material in Uganda.

Feedback from ISC. What is the path towards one CGIAR transition?

Response from FP2. FP2 is participating actively in the design of One CGIAR in collaboration with the CGIAR Community of Excellence for Seed Systems Development, Excellence in Breeding platform (EiB), Crops to End Hunger to position R&D research in One CGIAR. (<https://tools4seedsystems.org/>; McEwan et al. (2021); <https://www.cassavabase.org/>; <http://seedtracker.org/>).

Our activities under Genetic innovation are across all RTB crops.

System transformation. SEVERAL examples: varieties for different agro ecologies, seed system tool box, breeding modernization, genetic gain in the farmers' fields, building resilience under climate change etc.

Other discussion. There was a question about what kind of gender research will go forward in the seed systems initiative? And what is the progress on EGS technologies for varietal turnover?

Response from FP2. All our varieties, according to the G+ protocol, need to be gender-responsive. It's important to differentiate. Varieties need to be used by men and women. We need to identify their preferences early on to incorporate them into our profile and our breeding program, to get the right variety for males and females and children.

PRESENTATION ON FP3. RESILIENT CROPS

James Legg, see presentation [here](#)

Next steps

Much of our work is on plant health. We work with a well-organized plant health initiative, AgDx, and will also be linked to the initiative on digital tools, a carryover from big data. BXW should be housed in the plant health initiative.

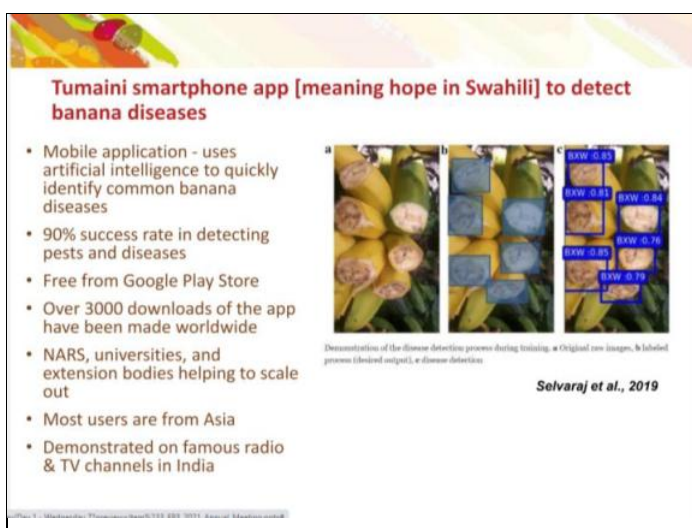
We hope that Akilimo will continue in Excellence in Agronomy. Several key innovations will feed into plant health, e.g. seed health, building climate resistance.

Eleven of 27 plant health innovations are from FP3. There will be opportunities for FP3 scientists to get involved in regional initiatives. Researchers based in Africa can continue to work for initiatives there, to scale innovations generated through FP3.

Discussion, FP3

Feedback from ISC. Besides plant health, what other agri-food target should be considered? Abiotic stresses, physiological impacts on the productivity of root crops?

Response from FP3. Some of the greatest biotic threats are pests and diseases moving across boundaries. TR4, mosaic disease in Southeast Asia, brown streak disease in cassava in Africa, and potato cyst nematode in East Africa are major threats are causing huge losses. It makes sense to focus on them. Climate change is a threat. Pests are sensitive to climate.



Tumaini smartphone app [meaning hope in Swahili] to detect banana diseases

- Mobile application - uses artificial intelligence to quickly identify common banana diseases
- 90% success rate in detecting pests and diseases
- Free from Google Play Store
- Over 3000 downloads of the app have been made worldwide
- NARS, universities, and extension bodies helping to scale out
- Most users are from Asia
- Demonstrated on famous radio & TV channels in India

Demarcation of the disease detection process during training: a Original raw images, b labeled process (labeled output), c disease detection

Selvaraj et al., 2019

Some will get worse, and some will get better. Disease may become less severe; some viruses replicate less when it gets hotter.

Feedback from ISC. What strategic recommendation should we make to submit to One CGIAR to ensure that the knowledge assets from FP3 contribute to the 2030 research strategy? Especially food, health, nutrition poverty reduction, gender equality.

Response from FP3. We put a big effort into sustainable cropping systems. That morphed into ACAI project, thousands of trials in several countries. We generate models of how a crop will perform. We have Africa-wide soil maps. All of these elements come together, as a platform called Akilimo. Farmers can access it. It has been developed for cassava, but the approach can be expanded in One CGIAR.

Other discussion. One kind of stress can lead to others. Fall armyworm is more stressing if there is less rain. We cannot divorce biotic stresses from abiotic ones. We have to put higher temperatures together with the effects of pests and diseases.

Nuru works well for cassava brown streak disease, and it has improved over time. Nuru should be linked with seed tracker. Farmers could use Nuru to identify disease, and Nuru could send them to Seed Tracker to find healthy seed of high-yielding varieties.

We are working on asymptomatic detection.

It will ultimately be possible to determine disease severity in the field, but it may not be necessary at this point. It is more important to know if the plant is infected or not.

The digital technology to support these tools just get better all the time.

DAY 2 – JULY 8TH

PRESENTATION ON FP4. NUTRITIOUS FOOD AND VALUE ADDED

Diego Naziri. See presentation [here](#)

Next steps

RTB golden egg, the farmer business school (FBS), aims to strengthen entrepreneurial skills of farmer groups. Almost 4000 farmers, mostly women, have launched small enterprises. It is unclear how the approach will be taken up by the new initiative. Breeding for end users' preferences is a candidate for a golden egg. We are documenting key FP4 innovations, such as an online portal and an online platform to promote the flash dryer.

Discussion, FP4

Feedback from ISC. If you improve the postharvest quality of cassava products, will that improve the consumption of the nutrient rich foods? It seems like a lot of food science, but how does it contribute to expected outcomes? How does micronutrient availability relate to improved diet? What is the strategy for scaling innovation? The flash dryer is already in stage 4, but it is only in a pilot stage? You only have six producers interested in using it, but this was linked to an expected outcome that 20,000 processors would improve production. So what is the strategy to scale it? When you talk about sweetpotato puree, the expected outcome was 2 million farmer households, and you mentioned 50,000 households in Bangladesh. Is there higher progress towards the original target?

Response from FP4. The flash dryer team improved the energy efficiency of the dryer, with a lot of research by our partners. Second, they trained partners on building and operating the dryers. Third, they looked at the economic aspects and to support the private sector in developing their own business plans to retrofit a flash dryer.

Feedback from ISC. There is a need for partnership in innovation, but what are the roles of the partners, and the value added?

Response from FP4. RTB has partners among the NARS and CGIAR centers. RTB waste and animal feed would not have been possible without ILRI, and NARO. NRI in the UK helped to model the improvement of cassava equipment, as a co-developer, with co-funding. With others like the cassava peel project, sweetpotato puree, there were other partners. With FBS, we have recently partnered with agencies of humanitarian and disaster relief such as WFP. Engaging with policy makers was critical for biofortification in Nigeria and Tanzania, for puree and cassava peels work.

Feedback from ISC. When you talk about One CGIAR, the FBS is promising, but to what extent are they using new technologies for products developed by this FP? How can they be exploited and scaled by One CGIAR?



Response from FP4. FBS is not about new RTB food products. It is built around locally available resources and skills and linkages with local universities, credit schemes. This is important for long-term scalability. We aligned with our partners, e.g. for fishery products, which evolved into aqua-based business schools. This is relevant as we move into One CGIAR. What cross-crop approaches can be useful for the new program in the One CGIAR?

Other discussion. The future home for this work is unclear. FBS can be included in markets and value chains, but postharvest is more complicated. We are establishing a community of practice. Processing often occurs in peri-urban areas. We don't have a strong position, and we hope that the steering committee can help.

PRESENTATION ON FP5. IMPROVED LIVELIHOODS AT SCALE

Marc Schut, see presentation [here](#)

Next steps

It is unclear where the science of scaling sits. We wrote a two-pager to influence the Dutch policy on the CGIAR, and why it is important to invest in that. We are writing up lessons from CIALCA for regional integrated initiatives. CIALCA is one of the longest lasting examples of consortium work. The community of practice cannot provide system wide backstopping to support scaling across the portfolio. We need to think about how to do that across the whole portfolio. We need to explore that.



Discussion, FP5

Feedback from ISC. Are there any concrete examples that can be shared for outcomes (improved food and nutrition security; improved incomes for women and Youth and any for gender transformation)?

Response from FP5. Flagship 5 tries to add value to innovation and scaling processes in other Flagships. One Acre Fund in East Africa is using farm household typologies and has validated it with 40,000 households in Rwanda, using their own funds.

Feedback from ISC. Which other partnerships have been established lately?

Response from FP5. There is a new partnership with the CGIAR Systems Organization for broad application of the Scaling Readiness approach as part of One CGIAR. Partnerships with private sector in the RTB Scaling Fund projects. GIZ Taskforce on Scaling, and the global Scaling Community of Practice.

Feedback from ISC. Apart from scaling, what would be major areas of scientific progress in FP5? Are there specific solutions that will be major GAME Changers? If you are going to advise Nigeria or Ghana, are there things the national system should pick up?

Response from FP5. Methodological advances for ex post studies. DNA-based improved cultivar identification and GPS-based area measurements to estimate adoption and impacts

of RTB crops varieties. Farm household typology studies, citizen science for RTB pest and disease management at scale.

Feedback from ISC. How is it planned to create links of GENNOVATE methods with One CGIAR? Are there concrete examples on any unpacked gender dynamic in AR4D?

Response from FP5. There needs to be greater attention to gender dynamics that go beyond sex, but that look at intersectionality and heterogeneity among beneficiary groups at scale. This includes thinking about heterogeneity in age, location, land ownership, education level, etc. and how that kind of heterogeneity influences awareness of, access to, use of and benefit from agricultural innovations.

Feedback from ISC. How is it planned to build on RTB adoption and impact studies? Are there MEL lessons from RTB that can be shared with One CGIAR as it unfolds?

Response from FP5: Various areas of Flagship 5 research and impact pathways are being transitioned into the One CGIAR. The most concrete lessons are the cost review. How can we make better use of theory of change? Where do we see disconnect between research and delivery?

Other discussion. CGIAR is shifting to the transformative approach, to change gender norms. RTB was good to reach and benefit women, now we want to empower women. We have to change norms. We don't want to put women in current male-dominant systems. We have to change food systems to accommodate women who have different values and lifestyles and ethics. We are trying to influence agri-food systems.

In the current CGIAR, each program developed its own impact strategy. This was a missing opportunity to make a proper high-level impact system. If you want to start monitoring impact you need to look at synergies and to design monitoring in a way that is statistically relevant. You need a serious counterfactual. It does not make sense for each initiative to make their own framework and collect their own data.

To build capacities of CGIAR staff to apply the approach to make sure it is applicable and sustainable, the first step is to do that during proposal development, probably in the inception phase. This will be part of a longer process of culture change in One CGIAR where we become more impact oriented. Between now and the end of 2024 we will have most of the scaling readiness mapped, what kind of training will be necessary.

PRESENTATION ON CLOSEOUT PLANNING AND INNOVATION CATALOG

Enrico Bonaiuti, see presentation [here](#)

Close out steps

We are waiting for the system office to provide guidance on closing out procedure.

The system office allows only \$60,000 of accruals from the 2021 budget for 2022. They may grant some more but it is already in July and we need to advance in our closing out plan.

Key features of the plan: PMU staff positions will end on 31 Dec. If they need more time those will have to be as consultancies.

Support for reporting staff in the partner centers ends 31 December.

We want to simplify the reporting template for 2021. We want to bring forward technical reporting.

In July we need to report everything required to higher levels as publications. It is also important to monitor the budget.

In August we will focus on assessing the digital assets, to hand them over. E.g. are some of the websites in partner centers.

In September we will have a technical reporting meeting to prepare for October and November when we will focus on outcome stories.

In October we will draft narratives on outcome and policy impact stories. And upload them to the CGIAR dashboard. There will be a financial meeting.

In November we will continue to draft narratives on outcome and policy impact stories.

We will finish the RTB Flagship narrative (15 Dec). We will deliver the final indicators (innovations, milestones, MELIA studies, publications, system level outcomes and trainings) on 16 Dec. There are several financial meetings planned periodically to monitor expenditures.

In January and February 2022, the annual report narrative, and the RTB indicators will be submitted to the CGIAR dashboard.

In March and April, the partner centers will submit financial support and we will consolidate them and submit the final financial report in April.

Innovation catalog

Goal: CGIAR innovation management system that will allow innovations to be deployed faster, at a larger scale and a reduced cost. This leads to a greater impact of innovations where they are most needed.

Objective: Develop an approach and standards for documenting innovations within One CGIAR including:

- Tailor-made scaling readiness framework
- Individual RTB innovations are the building blocks
- Contextual information and connection to innovation packages.

Different levels of documentation

Innovation profile, we have 116 innovations. Documentation includes:

- brief description
- the impact
- who designed, developed and delivered it? Where and when?

Innovation readiness, 25 innovations. Documentation includes:

- value added
- novel components and their readiness
- small repository of evidence
- maturity
- business case

Innovation use, 3 innovations. Documentation includes:

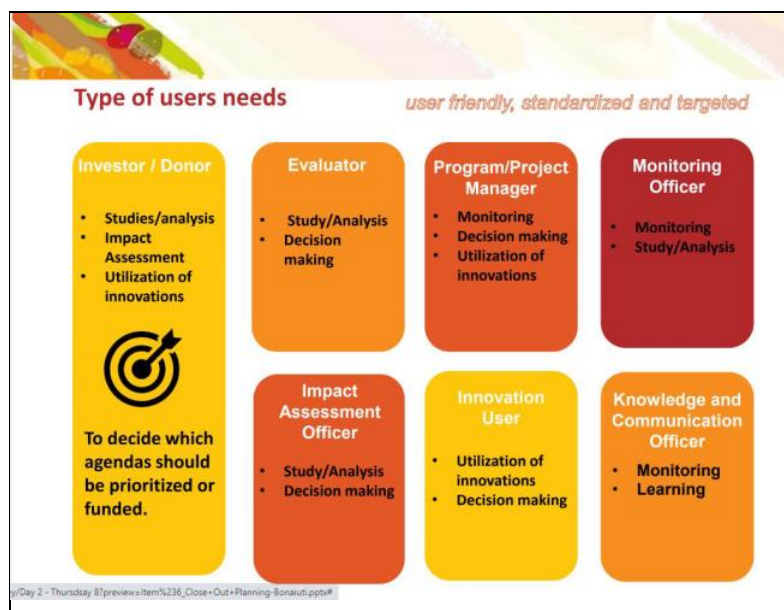
- use in diversified contexts
- repository
- complementary innovations
- impact at scale performance
- design and development of future interventions

To give a full spectrum of the package.

First, we have around 17 portals. The objective is to have a user-friendly, standardized, targeted typologies. We have interviewed several colleagues to come up with preferred valuables.

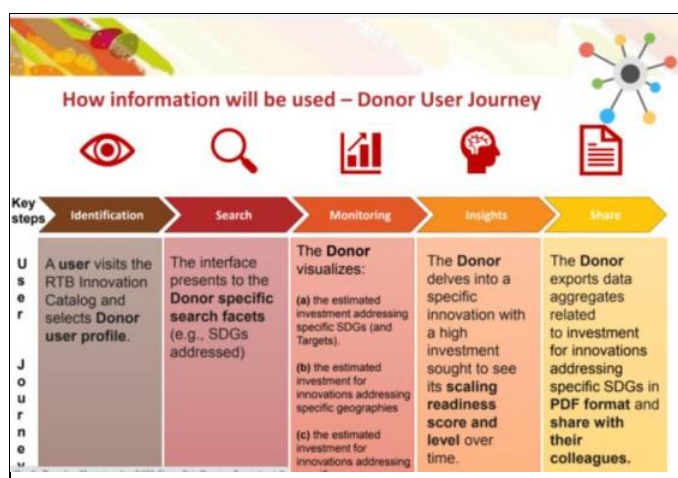
The users will include:

- Investor, donor
- Evaluator
- Program or project manager
- Monitoring officer
- Impact assessment officer
- Innovation user
- Knowledge and communication officer



The catalog will have a custom interface to address specific innovation. By August we will have a focus group to design the interface.

We will adopt a user journey, to identify what the user identifies, searches, monitors, the user's insights, and then the user shares, not only exporting information but sharing with other formats. The catalog will allow exporting to other portals. The added value would be to invest in indexing and promoting the catalog.



There will be three types of innovation per golden egg.

1. Capacity building, for example FBS
2. Policy and institutional innovation, for example Strategic research priority assessment toolkit
3. Technologies, for example the Alliance to foster and interoperability of digital tools for effective pest and disease management.

Discussion, Closeout

The presentations will all be shared.

To assemble the innovation description, we will extract the information from existing reports. The innovation leader will be able to update the information. For the second level of documentation there will need to be some interview, and will be tailor-made, so it is not too invasive.

From Jan to April there are three steps to complete the annual report. 1. The narrative component needs to be reviewed, and directed to CIP management and board. 2. The indicator review, those are entered into the quality assurance platform. And then maintaining some consultancy days to support that. 3. The financial data will not come till March and we cannot work on that any sooner.

Comment from ISC. Closing down a platform is a complex process. We hope that RTB is acknowledged and utilized. Everyone needs to go through a similar process. You have to transition into One CGIAR with the best technology and history with you. As you work with the system office, is this closedown process RTB-led and being adopted by others or are we all over the place?

Response from PMU. We have shared this process, but there has not been guidance from the system on how to close. There is no clarity on how to maintain the media assets. It should be a harmonized process.

Maintaining the RTB website is not costly, but you need people to keep the website alive. Hopefully the system will propose migration to One CGIAR. That does not apply just to RTB, but also to the centers and sub-sites.

CLOSING REMARKS

Barbara Wells (ISC)

It has been special being the DG of CIP, and while CIP leads this CRP, it was always balanced so it was not just CIP, but it also reflected the other centers. It is operated under strong leadership. We have outstanding individuals on the steering committee. One CGIAR could follow the RTB model, with the clusters and the work packages, incredible scientists leading those programs and continual improvement over the years. I reflect on the presentations that have been made over these days. They have improved over the years. We knew that the transition to One CGIAR was coming, and we didn't want to lose the unique work of RTB.

When we started calling them golden eggs, we gave Graham a hard time about the name. and now we are selling them across the board. We pulled them together, and they are available so everyone can know the contribution of RTB, and take the science from the golden eggs and apply them in the One CGIAR. This team has done an incredible job and what we have done has readied the science to be adopted into One CGIAR. That is why I

asked Enrico about the closedown. I'm not sure that all the CRPs are ready to close down and make sure that the things they have done will be adopted. RTB never forgets who we do this for, and the gender focus, and the nutrition focus. What an incredible CRP this has been. We are changing the way it is structured. It will continue embedded, as the leaders have presented over these two days. We are clear where the science fits into the One CGIAR. We need to continue promote it. Yesterday Eugene mentioned the golden eggs that are nicely polished, but there is more science that could have been a golden egg with a little bit more time. That technology also needs to come into the new system. We have so many people involved in the initiatives and how well they are funded, all those things are coming. But RTB and your science will be embedded and have a huge impact on the One CGIAR, and make a huge difference for our beneficiaries. Thank you, to all of you.

Wanjiku Chiuri (ISC)

It has been a great experience and the focus on these crops which are used by marginal communities has been spirit lifting for me. It was enriching. Having had the opportunity to contribute to RTB and seeing how far it evolved and achieved so much in such a short time has been encouraging. We have worked with a good team, and the fantastic members of steering committee. It is unfortunate that Covid will not allow us to meet. Much of what we have developed at RTB will go into One CGIAR. Impact is being felt, and that is encouraging. There will be no steering committee, but I will keep track of your innovations as we go forward. It has been a pleasure to know all of you. Thank you very much.

Eugene Terry (ISC)

I echo the sentiments entirely. I feel an enormous sense of fulfilment for consistent and steadfast manner in which you have dedicated your talents and energy towards RTB outcomes. We are indeed fortunate to have such excellent talent. It is due recognition for such talent that one of us has been appointed to be the director of science for genetic information. I could not have worked with a better collection of talent. Bravo to all of you, and hopefully we will have the opportunity to interact in the One CGIAR. Thank you so much. This has been an excellent experience for me.

Graham Thiele

Thanks for the great feedback. Thanks to our steering committee, to Eugene and Wanjiku for being amazing chair and secretary, and to all the great contributions from our steering committee. Thanks for the great presentations. Thanks for our outside participants. I am seeing Dunstan, André, and many old friends have joined us. Many of you have made fundamental contributions. This isn't quite the end. We have the rest of the program to wrap up, but this is our last major event. It has been for me a pleasure and a joy to lead this, and to get to know so many of you personally. It has been an amazing experience. Thanks to all of you. Much of this work will find its way into One CGIAR.

ANNEX - AGENDA

DAY 1: July 7, Wednesday - Programmatic update and progress by flagship

Lima Time	Item #	Topic	Who
7:00-7:05		Welcome	Eugene Terry (ISC Chair)
7:05-7:25	0	Overview (incl. communication around golden eggs and gender)	Graham Thiele
7:25-7:40		Q&A	Q&A: Michael Friedmann
7:40-8:00	1	Presentation: Flagship 1 - Enhanced genetic resources (incl. 2020-2021 achievements, golden eggs and transition recommendations)	Luis Augusto Becerra
8:00-8:25		Feedback section: 10 min for ISC (Carlos Iglesias) + 15 min for others	Q&A: Michael Friedmann
8:25-8:40		Break	
8:40-9:00	2	Presentation: Flagship 2 - Adapted productive varieties and quality seed (incl. 2020-2021 achievements, golden eggs and transition recommendations)	Maria Andrade
9:00-9:25		Feedback section: 10 min for ISC (Philippe Vernier) + 15 min for others	Q&A: Michael Friedmann
9:25-9:45	3	Presentation: Flagship 3- Resilient roots, tubers and bananas (incl. 2020-2021 achievements, golden eggs and transition recommendations)	James Legg
9:45-10:10		Feedback section: 10 min for ISC (Eugene Terry) + 15 min for others	Q&A: Graham Thiele
10:10-10:05		Close	Graham Thiele

DAY 2: July 8, Thursday - Programmatic update and progress by flagship

Lima Time		Topic	Who
7:00-7:05		Welcome	Graham Thiele
7:05-7:25	4	Presentation: Flagship 4 - Nutritious food and value added (incl. 2020-2021 achievements, golden eggs and transition recommendations)	Diego Naziri
7:25-7:50		Feedback section: 10 min for ISC (Maria Veronica Gottret) + 15 min for others	Q&A: Graham Thiele
7:50-8:10	5	Presentation: Flagship 5 - Improved livelihoods at scale (incl. 2020-2021 achievements, golden eggs and transition recommendations)	Marc Schut
8:10-8:25		Break	
8:25-8:50		Feedback section: 10 min for ISC (Wanjiku Chiuri) + 15 min for others	Q&A: Vivian Polar
8:50-9:00	6	Close Out Planning including status of Innovation Catalogue	Enrico Bonaiuti
9:00-9:10		Q&A	Q&A: Vivian Polar
9:10-9:30		RTB grand finale	Barbara Wells, and Wanjiku Chiuri, Eugene Terry



RESEARCH
PROGRAM ON
Roots, Tubers
and Bananas

The CGIAR Research Program on Roots, Tubers and Bananas (RTB) is a partnership collaboration led by the International Potato Center implemented jointly with the Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT), the International Institute of Tropical Agriculture (IITA), and the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), that includes a growing number of research and development partners. RTB brings together research on its mandate crops: bananas and plantains, cassava, potato, sweetpotato, yams, and minor roots and tubers, to improve nutrition and food security and foster greater gender equity especially among some of the world's poorest and most vulnerable populations.

www.rtb.cgiar.org

Alliance

