SPIA pipeline – upcoming evidence and way forward in One CGIAR

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9 March, 2022

Photo Credit: C de Bode CGIAR

Current SPIA 6-year workplan, 2 business cycles

2019-2021

- Scoping, matching, preparation IA studies
- Design and launch:
  - Accountability studies
  - Learning studies
- Methods and country work

2022-2024

- Research findings from SPIA portfolio
- Insights from methodological development
- Broader use of rigorous methods
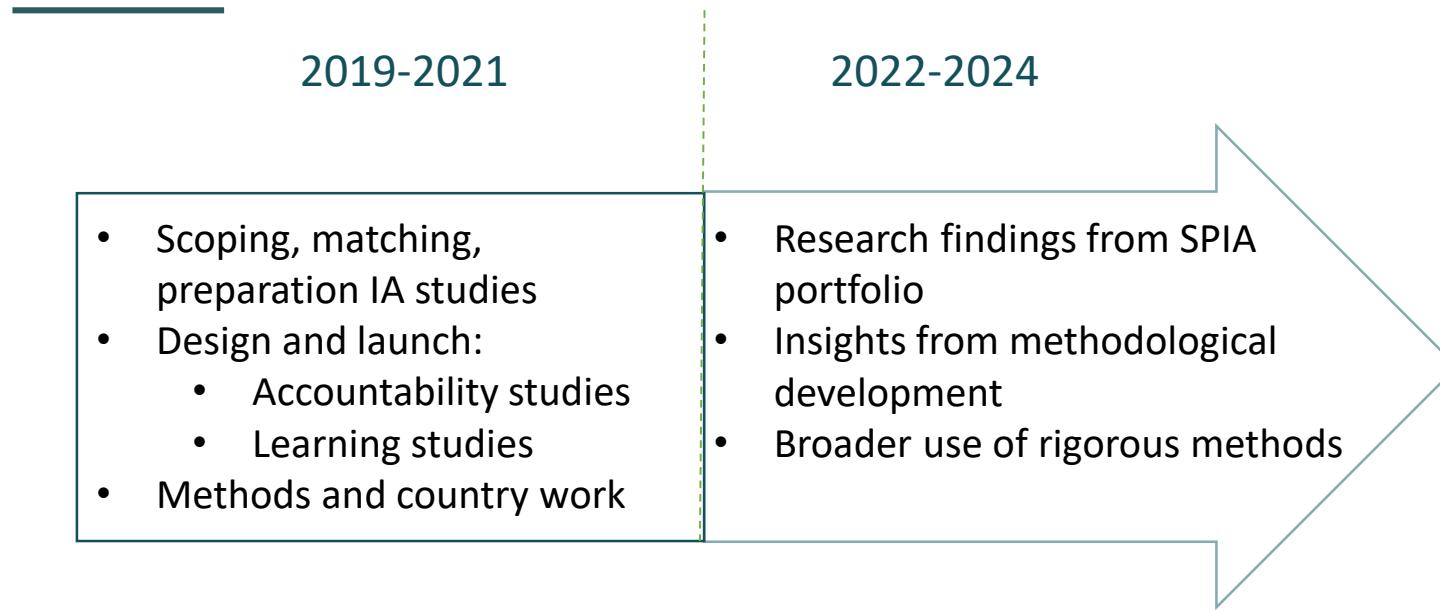
Objectives of the 6 –year workplan
1) Support CGIAR's strong commitment to embed a culture of impact assessment into the System
2) Expand and deepen evidence of impact of CGIAR research investments
3) Improve and institutionalize collection of data on diffusion and use of CGIAR innovations in national data collection systems

Objective 3: Improve and institutionalize collection of data on diffusion and use of CGIAR innovations in national data systems

- [Strategy since 2014](#) to partner with national statistical agencies (and World Bank)
    - Primary goal: Embed CGIAR data needs into well-institutionalized surveys
    - Secondary goal: Empirically test new data collection approaches and provide guidance for researchers to use them
- Focus on high-priority countries for CGIAR
    - First in **Ethiopia** and **Uganda**
    - **Vietnam** (operational) and **Bangladesh** (starting mid-2022) added under current phase of SPIA's workplan
- National representative data allows to document reach of CGIAR-related innovations and policy influences, including
    - Synergies across innovations (~ bundles)
    - Who is being reached: inclusion by gender, but also youth, smallholder status, poor, …
- Testing different models of institutionalization, integration and partnerships
- Young virtual team led by senior researcher James Stevenson & SPIA Chair

Ethiopia
SPIA panel lead: Prof Karen Macours

- Ethiopian Socioeconomic Survey wave 4 (2018/19) completed with several data collection innovations embedded by Central Statistical Agency (CSA)

- Provided data for SPIA's 2020 report *"Shining a Brighter Light: Comprehensive Evidence on Adoption and Diffusion of CGIAR-related Innovations in Ethiopia"*
  - Evidence of large adoption across science domains (4 to 11 million household)
  - But also very skewed distribution – many innovations with low adoption

- 24,233 downloads of the 2018/19 dataset (as of Feb 23, 2022)

Pipeline:

- Causal impact studies for selected innovations (DSM, small mechanization)

- June 2022: IFAD conference session featuring best papers from small grants call using the wave 4 data

- Mid-2023: wave 5 (2021/22) data will be released, with follow-up report from SPIA on dynamics of adoption (with COVID, civil conflict in Ethiopia in the interim)

Standing Panel on Impact Assessment

CGIAR

Shining a Brighter Light: Comprehensive Evidence on Adoption and Diffusion of CGIAR-related Innovations in Ethiopia

Frederic Kosmowski, Solomon Alemu, Paola Mallia, James Stevenson, Karen Macours

October 2020   SPIA Synthesis Report

Universe of all CGIAR research in Ethiopia

Legend:
- Natural resource management
- Animal agriculture
- Crop germplasm

- **90** interviews with CGIAR scientists, EIAR colleagues, government officials
- Review of published and grey literature, official statistics, NGO projects

52 innovations identified being at least at pilot stage: documented in the stock-take

26 claims of policy + influence (from CRP OICRs)

30 with information suggesting having been disseminated at scale

30 candidate innovations with "observable features" for either household or community survey

18 integrated into ESS 3/ESS 4 and the focus of the 2020 report

3 the focus of other nationally-representative studies

9 candidates for inclusion in future survey waves

Uganda

SPIA panel lead: Prof Travis Lybbert

- [Partnership with Ugandan Bureau of Statistics (UBoS)](#) and National Agricultural Research Organization (NARO)
  - Uganda National Panel Survey (UNPS) and Annual Agricultural Survey (AAS) being integrated together for first time in 2021/22 (part of 50x2030)
  - Integration of targeted measures in National Service Delivery Survey (NSDS) and Uganda Demographic and Health Survey (UDHS)

Pipeline:

- 2023: Synthesis report on innovations and policy influence claims
  - Features DNA fingerprinting of plant samples of six crops:

    beans, sweet potato, cassava, banana, maize, groundnuts
  - Improved measurement of plant & livestock health– resistance and mitigation measures
  - Links to study on seed system functioning for beans & maize (CIAT & UC Davis)
  - Causal impact study building on biofortified crop monitoring data (with CIP&HarvestPlus)
  - Community-level measures of trees-on-farms, innovation platforms, food-safety, mechanization
  - Detailed study of selected policy influence claims

    Qualitative research being led by SPIA Member Dr. Monica Biradavolu

Universe of CGIAR-related research in **Uganda**

- Interviews with CGIAR scientists, NARO colleagues, government officials
- Review of published and grey literature, official statistics, NGO projects
- Consultation workshop (October 2019) to identify priorities

- Crop germplasm
- Animal agriculture
- Natural resource management

55 innovations identified being at least at pilot stage: documented in the stock-take

29 innovations included in 2021/22 UNPS/AAS integrated survey and/or 2021 NSDS survey

14 policy influence claims identified

Vietnam

SPIA panel leads: Prof Sujata Visaria and Dr Monica Biradavolu

Bilateral [partnership between SPIA and Vietnam General Statistical Organization (GSO)](#) signed Dec 2021

Pipeline:

- Mid-2023: First report on three innovations (VHLSS), and data quality assessment / strategy
  - Initial phase (2022) focuses on innovations in rice-systems embedded in widely-used Vietnam Household Living Standards Survey (VHLSS):
    - Adoption of sustainable intensification principles (AWD and 1M5R)
    - Use of recommendations coming from the Climate Smart Maps and Adaptation Plans (CS-Maps)
    - Rice varietal adoption (using DNA fingerprinting)
- End 2024: Synthesis report
  - 2nd round of VHLSS data with wider range of innovations (TBC)
  - Study of influence of "climate smart maps" in provinces
  - Measurement innovations for studying adoption of complex NRM practices
  - Impact study on GIFT tilapia roll-out (TBC)

Universe of CGIAR-related research in **Vietnam** (2000-2021)

Preliminary

- Crop germplasm
- Animal agriculture
- Natural resource management

- 30+ interviews with CGIAR scientists and national partners

- Review of published and grey literature, official statistics, government decrees

27 policy influence claims

69 innovations identified in the stock-take

21 with information suggesting they may be adopted at scale

Animal agriculture includes aquaculture & food safety
NRM includes digital tools and mechanization

Bangladesh
SPIA panel lead: Prof Kyle Emerick

- Currently recruiting for two positions – one junior, one post-doc – to start mid-2022 (hosted at IRRI in Dhaka)

- Methodology will broadly follow the template of the other countries
  - To be combined with causal IA studies on selected innovations/policy influences

- Expected focus on climate change adaptation, women's empowerment, nutrition, aquaculture, rice, lentils, …

Cross-cutting: Measurement agenda

- New technologies provide new opportunities for [how we measure adoption of CGIAR-related innovations](#) and associated outcomes

- Methodological experimentation implicit to success of country work – how do we measure what we need to measure?

- DNA fingerprinting of crop varieties: technical guidance published 2020; field guidance for economists / social scientists coming in mid-2022

- Remote sensing for impact evaluation: guideline document expected mid-2022

- Measurement guidance under development:
    - Policy influence
    - Adoption of complex NRM practices
    - Community mapping vs remote sensing
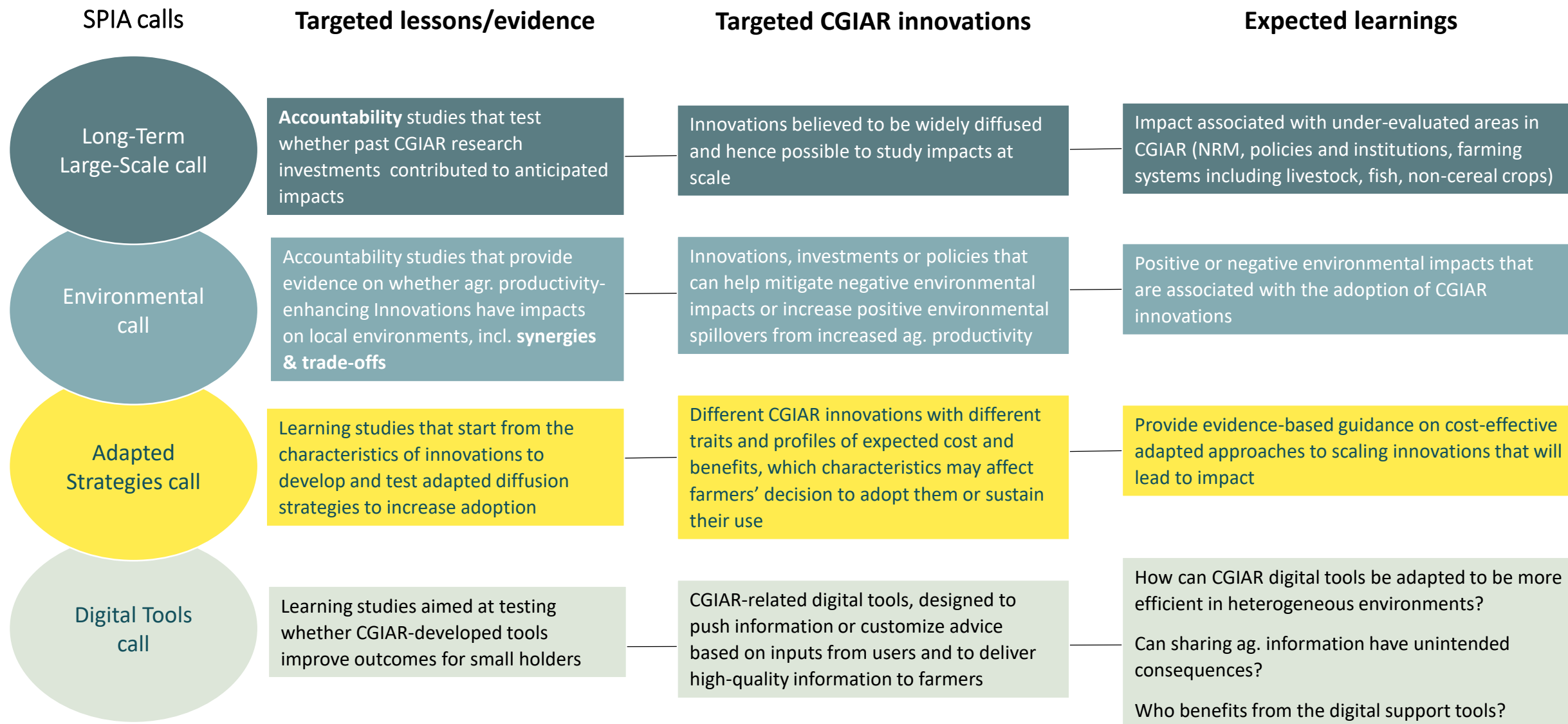   - Heterogeneity in soils
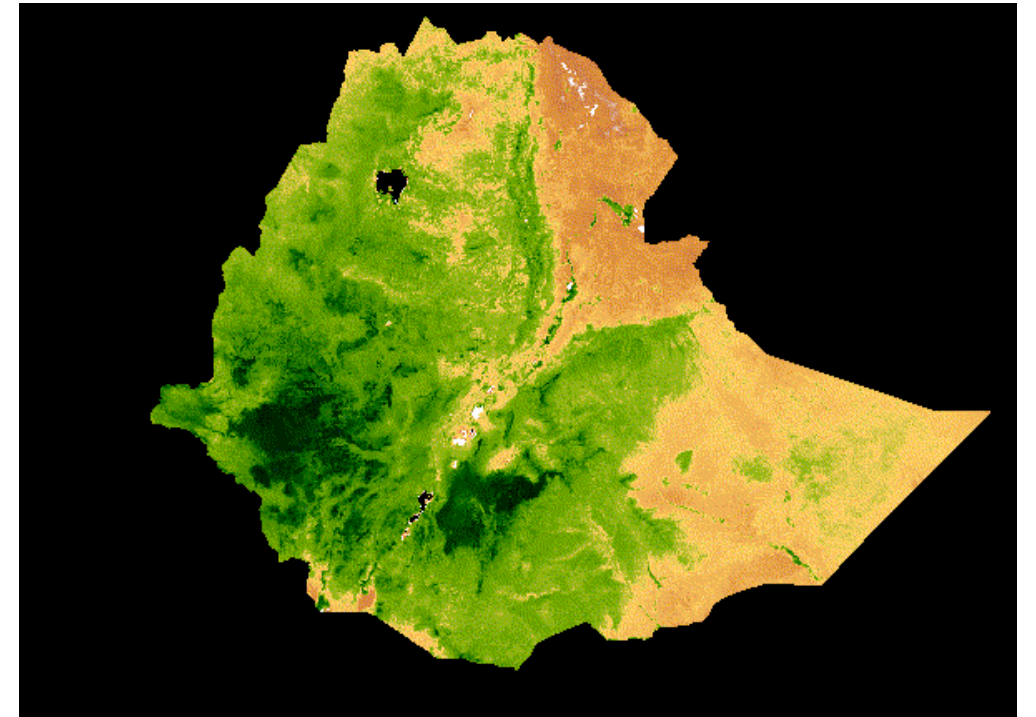
NDVI animation of Ethiopia (Johanne Pelletier)

Objective 2: Expand and deepen evidence of causal impact of CGIAR research investments

- Focus on <u>system-level</u> impact through support to two distinct <u>types of studies— accountability and learning</u>—with different objectives and associated processes clearly aligned with One CGIAR PRMF:
  - Four calls for proposals launched : Long-Term, Large-Scale impacts (2019), environmental synergies and trade-offs (2019), Adapted strategies to enhance uptake of CGIAR innovations (2020) and agricultural digital tools (2021)
  - 131 expressions of interest submitted by CGIAR centers and partners that became 25 full research proposals. 16 proposals were funded
  - Four proposals supported through a pilot phase to document the dissemination of the CGIAR innovations aiming to improve the research design.
- Study teams built on partnerships between CGIAR researchers and academics

Photo by: Habibul Haque/WorldFish Bangladesh

Overarching lessons and evidence expected from studies in SPIA calls

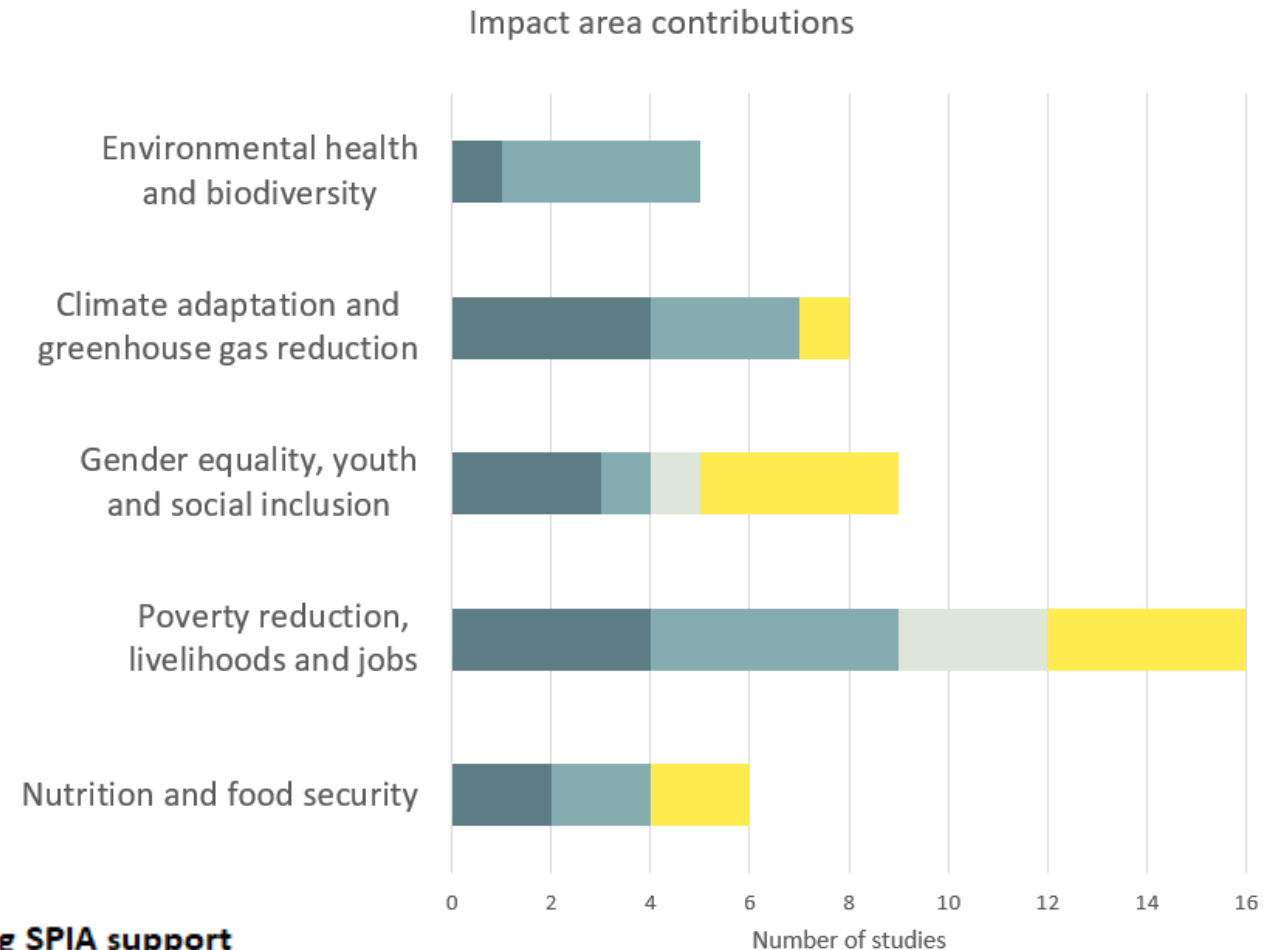| SPIA calls	Targeted lessons/evidence	Targeted CGIAR innovations	Expected learnings
Long-Term Large-Scale call	**Accountability** studies that test whether past CGIAR research investments contributed to anticipated impacts	Innovations believed to be widely diffused and hence possible to study impacts at scale	Impact associated with under-evaluated areas in CGIAR (NRM, policies and institutions, farming systems including livestock, fish, non-cereal crops)
Environmental call	Accountability studies that provide evidence on whether agr. productivity-enhancing Innovations have impacts on local environments, incl. **synergies & trade-offs**	Innovations, investments or policies that can help mitigate negative environmental impacts or increase positive environmental spillovers from increased ag. productivity	Positive or negative environmental impacts that are associated with the adoption of CGIAR innovations
Adapted Strategies call	Learning studies that start from the characteristics of innovations to develop and test adapted diffusion strategies to increase adoption	Different CGIAR innovations with different traits and profiles of expected cost and benefits, which characteristics may affect farmers' decision to adopt them or sustain their use	Provide evidence-based guidance on cost-effective adapted approaches to scaling innovations that will lead to impact
Digital Tools call	Learning studies aimed at testing whether CGIAR-developed tools improve outcomes for small holders	CGIAR-related digital tools, designed to push information or customize advice based on inputs from users and to deliver high-quality information to farmers	How can CGIAR digital tools be adapted to be more efficient in heterogeneous environments? Can sharing ag. information have unintended consequences? Who benefits from the digital support tools?

Timeline for evidence and impact areas


Accountability studies:

- **Long-Term, Large-Scale impacts**
  SPIA panel lead: started by Prof J.V. Meenakshi

- **Environmental impacts**
  SPIA panel lead: Prof Kelsey Jack
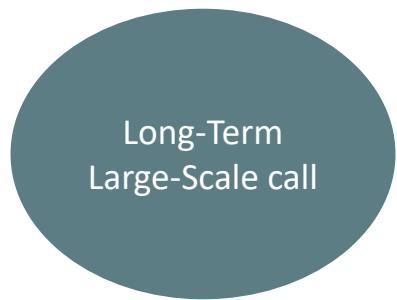
Learning studies:

- **Adapted Strategies to enhance uptake of CGIAR innovations**
  SPIA panel lead: Prof Rachid Laajaj

- **Impacts of Digital Support Tools in Agriculture**
  SPIA panel lead: Prof Kyle Emerick

Impact area contributions

Number of studies

- Long Term Large Scale call
- Environmental call
- Digital Tools call
- Adapted Strategies call

Timeline for independent evidence from studies receiving SPIA support

2022 — Q1 Q2 Q3 Q4

2023 — Q1 Q2 Q3 Q4
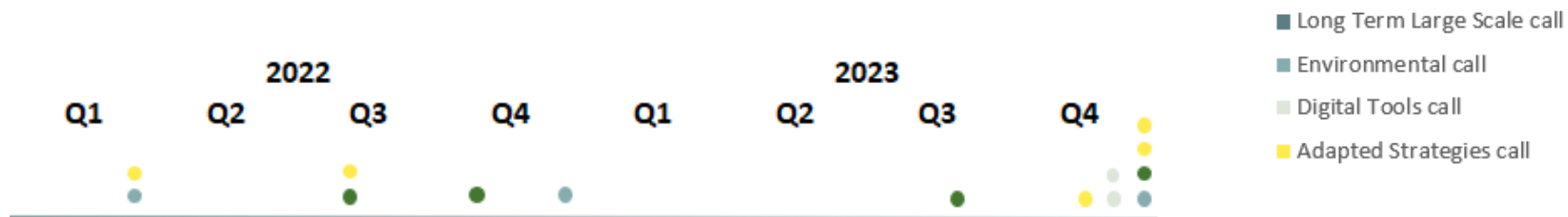
Note: These graphs do not include pilot studies that are testing different questions to refine the design of full studies

Innovation that CGIAR research contributed to

Expected impacts

Research questions

Long-Term Large-Scale call

Innovation that CGIAR research contributed to	Expected impacts	Research questions
CGIAR research on collective action/ property rights informed a large-scale initiative of land restoration in India	Ecological & socio-economic impacts of land restoration	Has restoration caused positive/negative externalities? Who benefitted from land restoration? (by gender/ethnicity)
Stress tolerant Rice Varieties in Bangladesh	Enhanced yield resilience to improve food security and reduce poverty	Has adoption of STRV increased resilience of the poor to climate change shocks? Has adoption of STRV increased productivity, income, employment and food security ?
Index based livestock insurance (IBLI) in Kenya & Ethiopia	Sustained adoption and impacts on herd management and welfare	What has been the dynamics of adoption and dis-adoption of IBLI? Has the early IBLI coverage resulted in herd management and household welfare impacts?
Blast resistant wheat varieties in Bangladesh	Productivity and profitability impacts. Reverting decline of wheat cropping land	Do blast resistant varieties improve wheat yield and profitability? Does adoption change cropping patterns? Is there differentiated demand for improved seed?

| | Innovation that CGIAR research contributed to | Expected impacts | Research questions |

Innovation that CGIAR research contributed to   **Expected impacts**   **Research questions**

Environmental call

Happy seeder, a second-generation conservation agriculture in India

Reduction in residue burning

Reduction in air pollution

Improved health impacts

Does the adoption of happy seeders reduce residue-burning rates?

Would this imply reduction in CO, NO and CH gases?

Does adoption result in health benefits through reduced pollution?

Index based livestock insurance (IBLI) in Kenya

Enhanced pastoralist resilience may exacerbate stocking rates and generate negative rangeland health effects

Are there unintended environmental effects of IBLI?

How to measure rangeland health effects at scale?

Is the scaling of IBLI exacerbating stocking rates and generating negative rangeland health effects?

Agricultural intensification (improved seeds, ISFM, seed treatment) in sorghum and millet systems in Mali

Does agricultural intensification lead to land sparing or to cropland expansion with negative effects on tree coverage?

Does intensification of sorghum and millet systems result in crop substitution (replacing cotton) or induces further deforestation?

Do changes in productivity affect food availability and household income?

Note: These tables do not include pilot studies that are testing different questions to refine the design of full accountability studies

Innovation that CGIAR research contributed to	Challenges that may limit a widespread adoption of innovation	How ToC is being tested (research questions)
Machine harvestable chickpeas (MHC) varieties in India	Traditional varieties not suitable for harvester Lack of harvesters with adequate blades Field preparation for MHC is different Yield comparison with old varieties unknown	Can partial subsidy to book harvesters enhance their use? Can extension help to better-manage MHC varieties? Does varietal comparison enhance adoption?
East Africa livestock vaccine (ECV) in Kenya	Vaccines only economically viable when large number of cattle vaccinated simultaneously Vaccine administration expensive and require a certified vaccinator, unaffordable for individuals	How improved access to ECV affects vaccination rates? Does presence of check-offs system increase effect of access on vaccination rates? Effect on cattle investment, milk consumption & sales and profits?
Adapted motorized paddy weeder (AMW) in Uganda	Demand for AMW maybe limited due to failures in other input markets (fertilizer) If women primary labor provider, intra-household frictions may limit demand	Will adoption of weeder be higher if high quality fertilizer is also available? What are the options to effectively disseminate AMW minimizing the effect of the intra-household frictions?
Small-scale mechanization (SSM) in Ethiopia	Small mechanization is scarce and investing in this business may be risky High cost of traditional mechanization is unaffordable for small farmers	To what extent are supply and demand complementary or substitutable in scaling SSM? What set of affordable interventions are impactful in enhancing take up of SSM?
Sustainable Rainwater Harvesting (RWH) (demi-lunes) in Niger	RWH requires high constructions costs, intensive technical information a long-time frame to realize benefits Disadoption possible if benefits not in year 1	Can adoption of RWH be sustained overtime? Do training and cash transfers enhance adoption of RWH? Does adoption of demi-lunes improve soil quality?

Adapted Strategies call

Note: These tables do not include pilot studies that are testing different questions to refine the design of full learning studies

Innovation that CGIAR research contributed to

Key hypothesis in the ToC to be tested

Research questions

Digital Tools call

Picture based advisory (PBA) digital extension in India & Kenya

Picture submitted by farmers would increase the amount of information used by experts to provide preventive & curative advice

Tailored advice would increase farmer knowledge on crop management

Increasing farmer ownership of PBA will encourage adoption of both preventive and curative practices

Does tailored advice have an added effect due to increasing personalization?

Is there heterogeneity in returns to tailored advice across age, gender, smart phone access, digital literacy?

Interactive voice response (Tugere Muhinzi) for improving market linkages of smallholders in Rwanda

Facilitate the linkage between farmers and buyers of produce by promoting sustained engagement

Better market access would encourage shifting to high-value crops and adoption of irrigation, leading to positive effect on farm profits/welfare

Does the use of Tugere Muhinzi improves market intermediation?

Is market intermediation complementary to a subsidy in irrigation technologies in cultivation of high value crops?

Group-based ICT extension support system in Peru

Shortage of extension services and remoteness of target areas create opportunities for ICT to deliver knowledge of modern ag. techniques

Engage local focal points owning smart phones and having good linkages with community.

Incentives (financial and social reward) to keep focal points engaged

Are community-based ICT models cost-effective in delivering inclusive ag extension in areas with limited access to smartphones?

What kind of incentives are needed and how they should be awarded?

Note: These tables do not include pilot studies that are testing different questions to refine the design of full learning studies

Objective 1: Support CGIAR's strong commitment to
embed a culture of impact assessment into the System

- SPIA engaged with **One CGIAR Research Strategy** and associated **PRMF** providing specific inputs/comments, some that were incorporated

- SPIA provided advice to One CGIAR initiatives on rigorous methods and approaches for their impact assessment plans, through group and individual meetings with the SGD, initiatives teams and the engagement of the IA CoP

- SPIA supports **early career social scientists** through a series of webinars to design rigorous IA studies and through small grants **and fellowship programs** to address new research questions using existing SPIA datasets and working with IA academics

- SPIA engages a **broader IA CoP** through a variety of events. This includes non-IA specialists who use IA results and who make decisions about investing in generating them
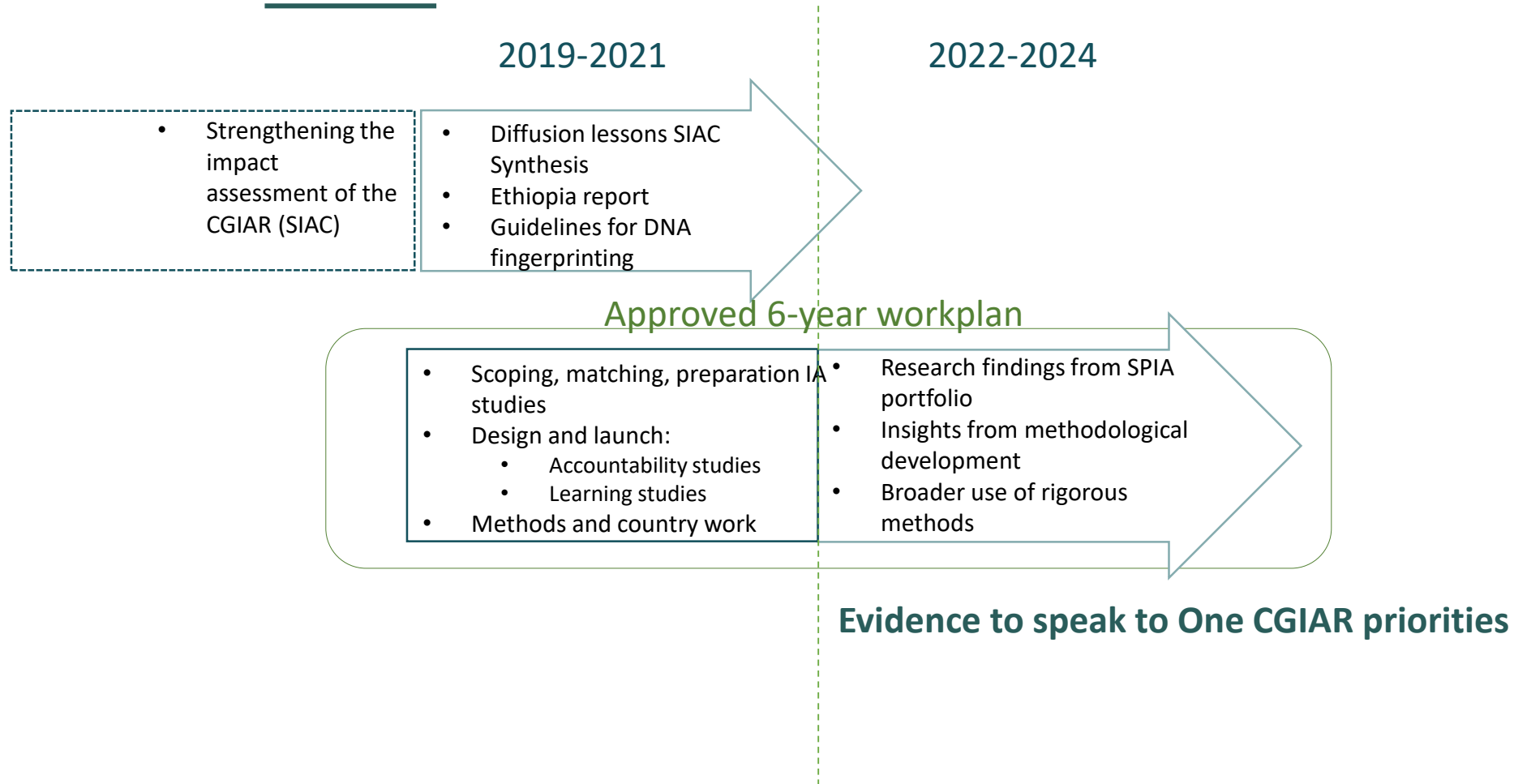

Photo by ICARDA 2019 Tesfaye Getachew Mengistu

6-year workplan, 2 business cycles

2019-2021 | 2022-2024

Approved 6-year workplan

- Scoping, matching, preparation IA studies
- Design and launch:
  - Accountability studies
  - Learning studies
- Methods and country work

- Research findings from SPIA portfolio
- Insights from methodological development
- Broader use of rigorous methods

6-year workplan, 2 business cycles

2019-2021

2022-2024

- Strengthening the impact assessment of the CGIAR (SIAC)

- Diffusion lessons SIAC Synthesis
- Ethiopia report
- Guidelines for DNA fingerprinting

Approved 6-year workplan

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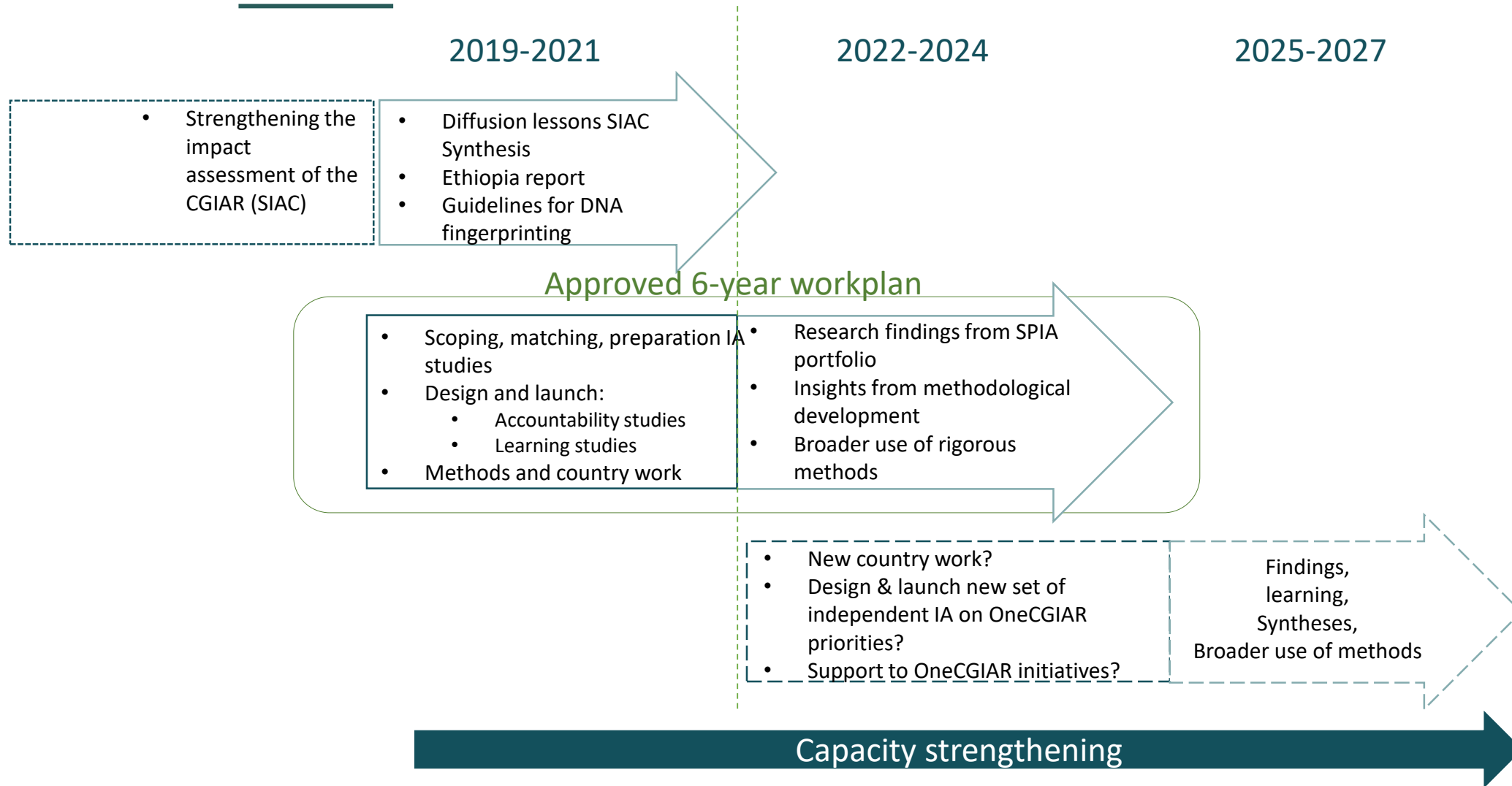- Broader use of rigorous methods

Evidence to speak to One CGIAR priorities

But if there are new asks

2019-2021   2022-2024   2025-2027

Approved 6-year workplan

- Scoping, matching, preparation IA studies
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- Support to OneCGIAR initiatives?
- New country work?
- Design & launch new set of independent IA on OneCGIAR priorities?

Findings,
Learning,
Syntheses,
Broader use of methods

Continuity over business cycles

For discussion

Planning for independent impact evidence beyond 2024, in line with One CGIAR results framework
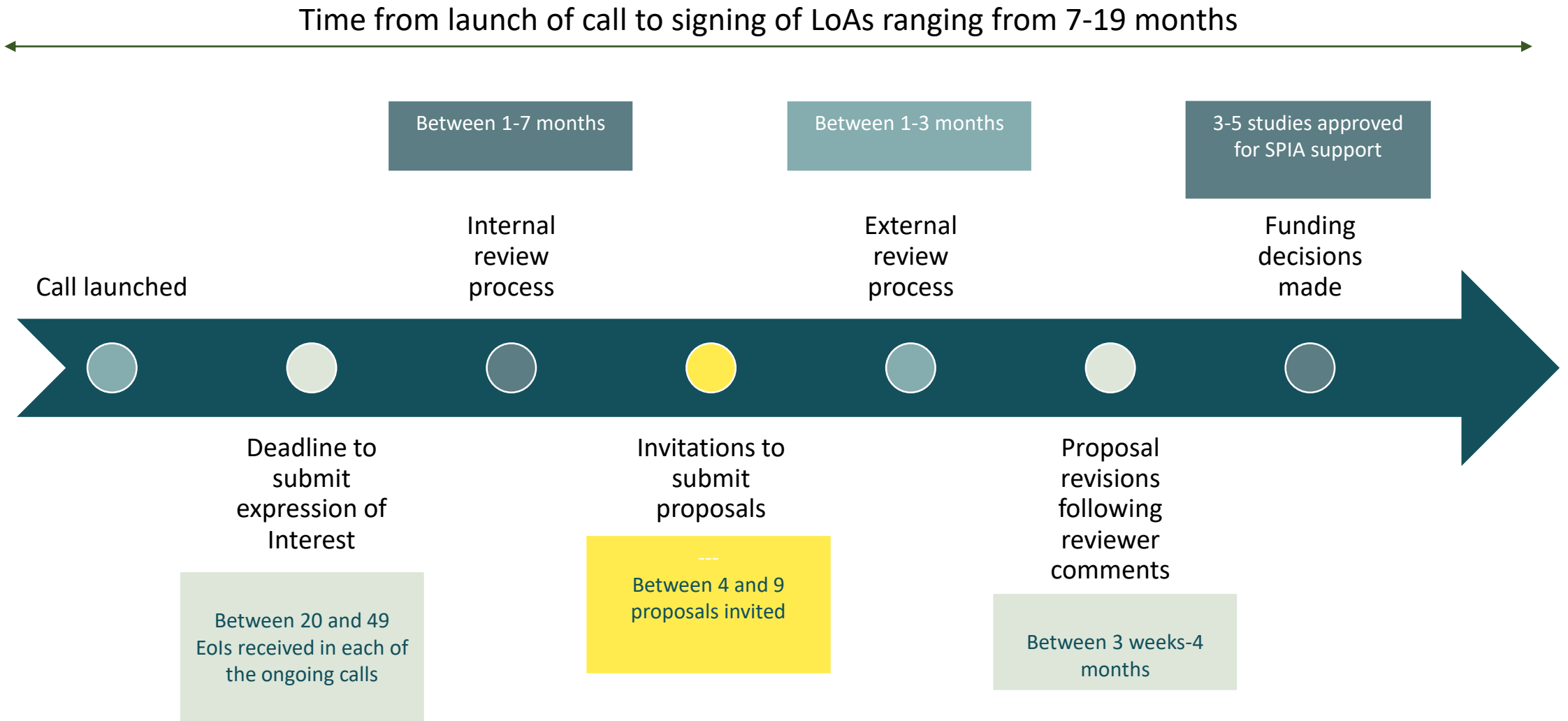
- New Country work?
  - Additional countries by 2027
  - Changes in reach as the portfolio gets implemented
  - Targeted causal IA studies on innovations/policy influences with large reach to build towards new RoR calculation (~ SPIA approach)
  - Cost-effective methods to obtain valid & reliable national-representative data of reach
    - e.g. combining machine learning methods with high quality ground-truth data from DNA fingerprinting

- Design & launch new set of independent IA on One CGIAR priorities?
  - Coordinate collection of monitoring data of scaling efforts, as a first step to design for long-term large-scale impact estimates of "big wins" by 2030
    - Prospectively work with scaling partners to know where, when, for whom, why scaling efforts rolled-out
    - Integrated approach from M&E to ex-post IA
    - To be further enhanced with country-coordination in scaling
  - Gender and social inclusion - differentiated impacts & innovations designed for women and youth
  - Long-term follow-ups on
    - Environmental and biodiversity synergies and trade-offs
    - Nutritional gain
  - Learning studies to test common key assumptions in ToC of One CGIAR

Independent strategic advice to the CGIAR System on impact assessment methods and practices
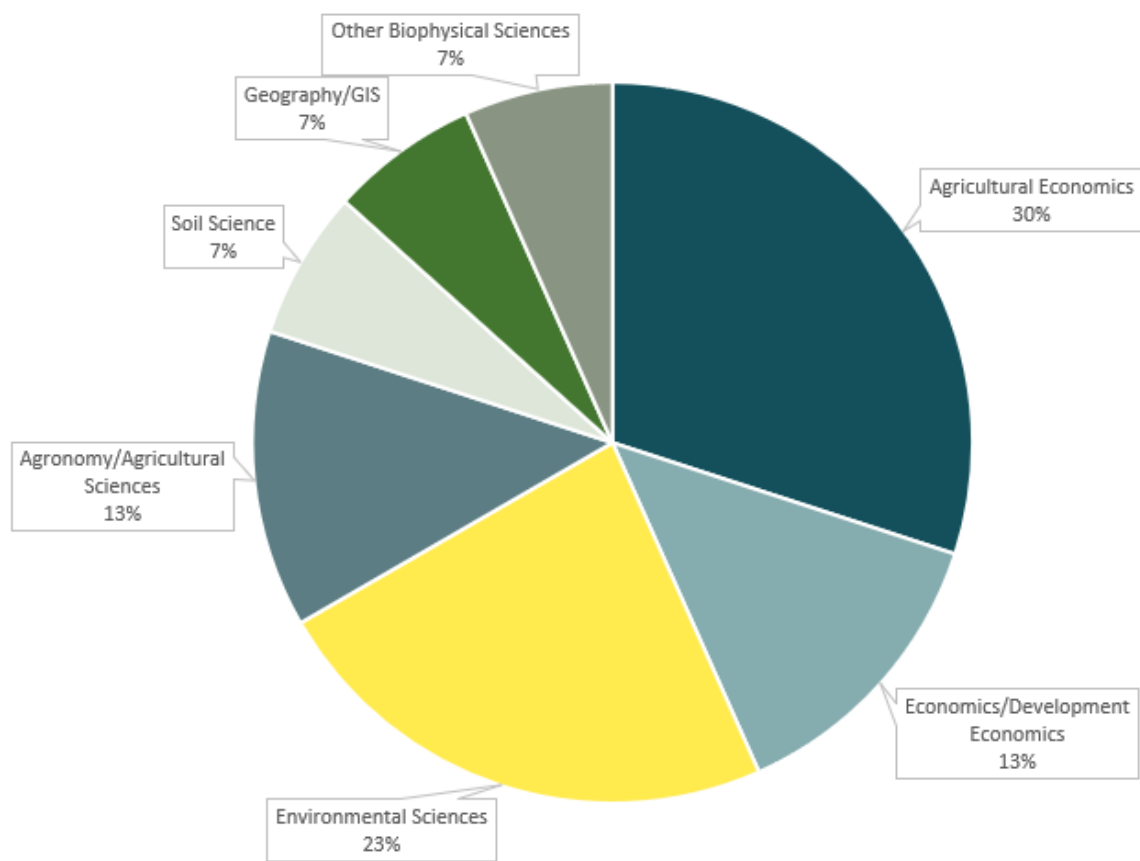
- Advice at initiative level
  - Building on strategic guidance on IA plans as part of the proposal stage and expanded IA CoP (~ webinars)
  - Demand-driven advice & support on overall methods for IA, prioritization, and matchmaking with external experts (and possibly support leveraging other external resources?)

- Advice at portfolio-level
  - As a science organization - insist on scientific process and rigorous evidence for scaling (implies need for incentives to learn from both failures and successes)
    - Important first step made with plans for impact assessment research as **integral part of the initiative proposals**
  - Investments in "**right" type of data and evidence**
  - Invest in the **"right" type of human capital**: new skills needed to bring in early career social scientists trained in state-of-the-art methods in various social sciences & from multidisciplinary programs
    - Opportunities exist: lots of young researchers, including from global south, graduating from best universities in the world with interest in One CGIAR topics.
    - Challenges exist too: incentives, supporting research environment, mentors, asymmetric information

From here we keep slides for back up

The SPIA calls: selection process

Time from launch of call to signing of LoAs ranging from 7-19 months

Between 1-7 months

Between 1-3 months

3-5 studies approved for SPIA support

Internal review process

External review process

Funding decisions made

Call launched

Deadline to submit expression of Interest

Invitations to submit proposals

Proposal revisions following reviewer comments

Between 20 and 49 EoIs received in each of the ongoing calls

Between 4 and 9 proposals invited

Between 3 weeks-4 months

Multi-disciplinary teams bringing independent evidence of CGIAR impacts

PI field of specialization: Accountability studies
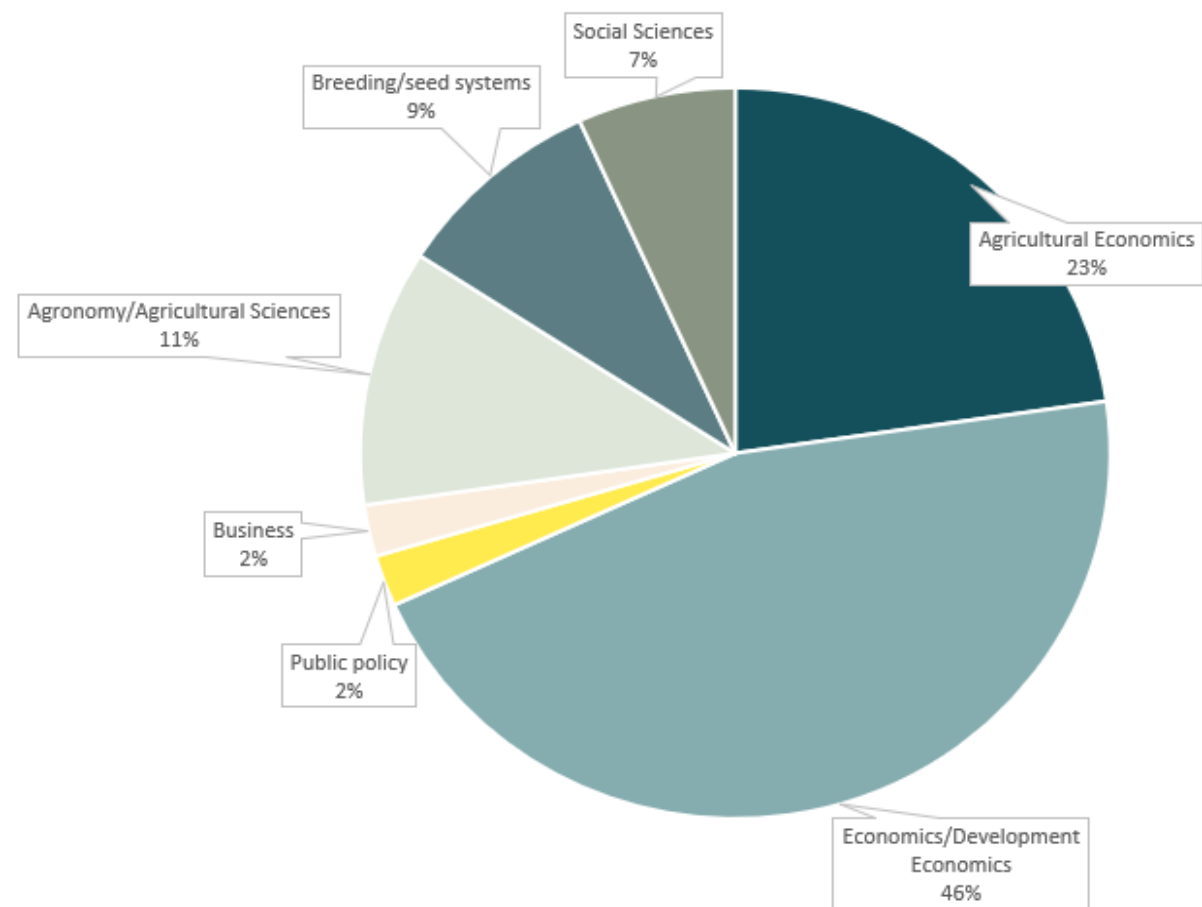
PI field of specialization: Learning studies

Note: These tables do not include pilot studies that are testing different questions to refine the design of full learning studies

Impact Assessment Community of Practice events organized or co-organized by SPIA 2019-2021

When	Where	Activity
Apr-May 2019	IFPRI, Washington	SPIA team presentation on IA methods in workshop organized by HarvestPlus and CIP on harmonizing indicators and approaches to impact assessment of biofortification.
May 2019	ILRI, Nairobi	SPIA chair visit to ILRI and ICRAF, presentation on impact assessment methods and SPIA approach, and meeting with science leaders and impact assessment researchers.
June 2019	Virtual	SPIA chair presentation in the annual Science Leader Meeting on foresight, impact assessment and evaluation.
19-21 June 2019	FAO, Rome	SPIA co-organized *Inclusive Agriculture and Rural Transformation: Building a Shared Research Agenda*, event organized by FAO, IFAD, the World Bank, SPIA of CGIAR, the Bill & Melinda Gates Foundation and the UK's Department for International Development.
2-4 Oct 2019	Amsterdam	SPIA co-organized annual meeting of the MEL and IA communities of practice on the topic of *Scaling, Impact, and Benefits of CGIAR Research—Towards 2021* in Amsterdam.
Dec 2019	Paris	SPIA workshop in Paris, to define the research and capacity development agenda in the area of better measurement of the adoption of agricultural innovations.
Jul-Aug 2020	Virtual	Annual Impact Assessment Focal Point (IAFP) meeting with participation for all CGIAR centers.
18 & 25 Nov 2020	Virtual	SPIA convened broader CGIAR CoP on impact assessment and a webinar with CGIAR research leaders and impact assessment researchers, focusing on the results of the Ethiopia synthesis report.
Nov 2020	Virtual	SPIA co-organized a series of webinars for CGIAR social scientists on 'getting published' with editors of high-impact journals
Jan-Nov 2021	Virtual	Monthly webinars for the CGIAR impact assessment community of practice to jointly reflect on methods and approaches to impact assessment.
30 June 2021	Virtual	Co-organized webinar with initiative design teams to support development of Impact Assessment plans.
Sept-Oct 2021	Virtual	Meetings with specific initiative design teams to support development of Impact Assessment plans.
27-30 Sept 2021	Virtual	Co-organized workshop on Measuring the Impact of Integrated Systems Research
10 Nov 2021	Virtual	Annual meeting with the CGIAR Impact Assessment Focal Points