



## Standing Panel on Impact Assessment

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CGIAR

Independent  
Science and  
Partnership  
Council

# Content

## 1: Overview of the current work program

Objective 1: Test new methods for measuring adoption

Objective 2: Gather adoption data at scale

Objective 3: Assess impacts of CGIAR research

Objective 4: Community of practice for impact assessment

## 2: Future SPIA priorities

# 1. SIAC Activities

<http://impact.cgiar.org>

1) Adoption Methods	<b>Crops: DNA fingerprinting</b> MSU / SPIA Sec.	<b>NRM: Phones and drones</b> MSU / SPIA Sec.	<b>Private sector survey firms</b> MSU	<b>Guidance for system</b> MSU/SPIA/PIM
2) Adoption Filling gaps	<b>Crops: S and SE Asia</b> MSU	<b>NRM: Surveys of key practices</b> SPIA / Paul Vlek	<b>Policy-oriented research claims</b> Renkow	<b>Embedding Qs in surveys</b> SPIA Sec. / MSU
3) Impact studies	<b>Nutrition studies</b> Erwin Bulte	<b>Widely-adopted technologies</b> Bob Herdt	<b>RCTs</b> Karen Macours	<b>Under-evaluated areas</b> JV Meenakshi
4) Capacity- building	<b>Quality rating system</b> SPIA Sec.	<b>Univ-CGIAR partnerships</b> George / Kathy	<b>Workshops / conferences</b> SPIA Sec.	<b>Website</b> SPIA Sec.

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## Context / Relevance



Up to 25 – 30 years ago, it was a lot easier to identify improved vs local varieties of the major crops

Traits being bred for now are less phenotypically distinct to naked eye e.g. heat tolerance, earliness, resistance to pests / diseases

## Context / Relevance

**Farmer knowledge** of the varieties they are growing is important for micro-based impact studies

**Expert opinion** of varieties adopted in a country is important for macro-focused impact studies

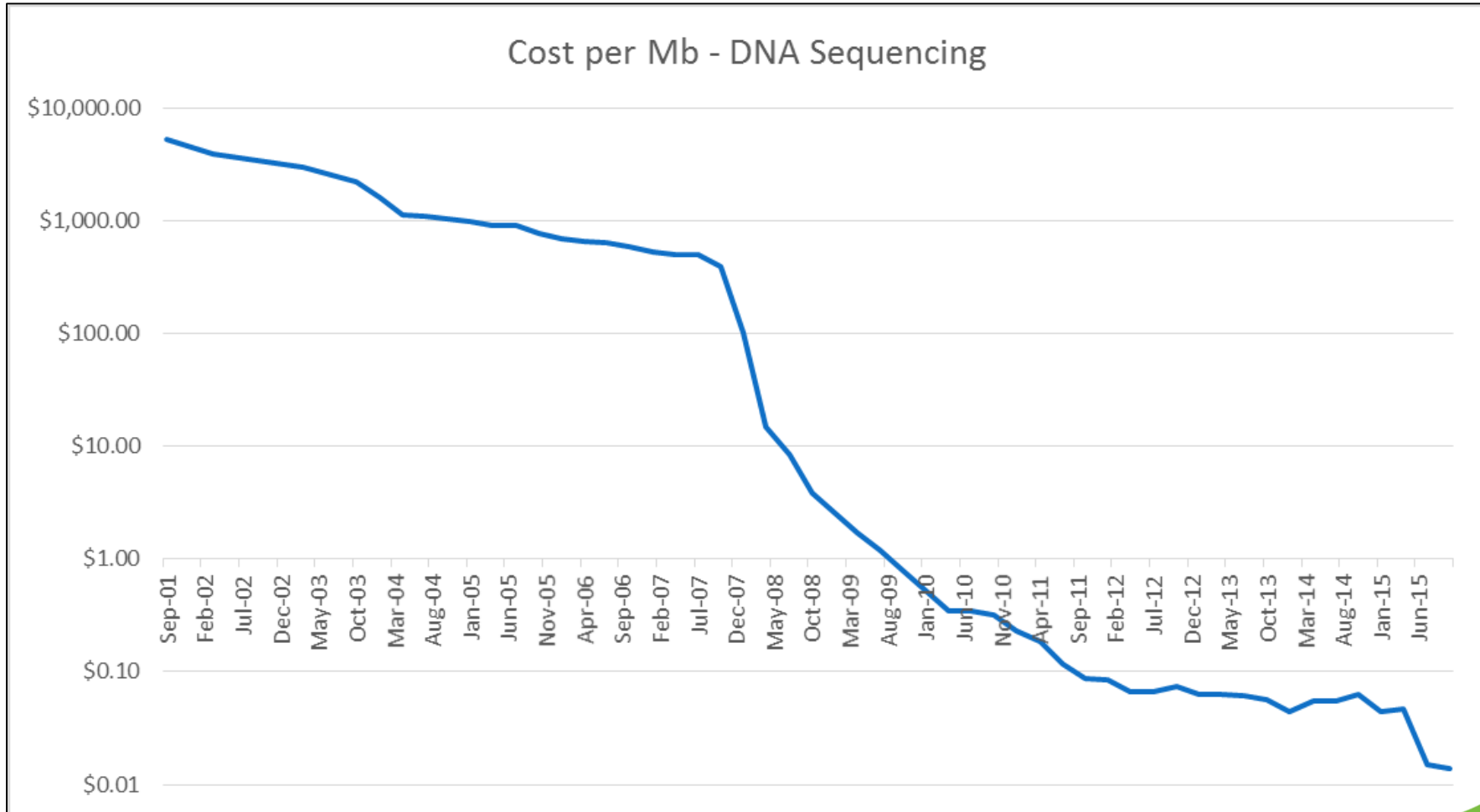
Potential sources of error:

- Informality of seed system
- Recycling
- Counterfeiting
- Mixes (deliberate or in error)

Potential sources of error:

- Lack of sufficient expertise
- Focus on NARs releases
- Geographic biases and distortions
- Biases, conscious and unconscious

## Context / Relevance





# DNA fingerprinting projects

<http://impact.cgiar.org/>

SIAC project	Institutions	Sample
Cassava, Ghana	MSU / IITA	914
Beans, Zambia	MSU / CIAT	736
Maize, Uganda – Leaf	SPIA / LSMS-ISA / LGC	550
Maize, Uganda – Grain	SPIA / LSMS-ISA / Diversity Arrays	550
Sweet potato, Ethiopia	SPIA / Diversity Arrays	259
Cassava, Malawi	SPIA / LSMS-ISA / Diversity Arrays	1,200
Wheat, Bihar	MSU / CIMMYT / ICRISAT	3,400
Lentil, Bihar	MSU / CIMMYT / ICRISAT	3,400
Cassava, Vietnam	MSU / CIAT	1,000
Rice, Indonesia	MSU / IRRI / Cornell	810
Cassava, Nigeria	IITA / Cornell	2,500
GIFT Tilapia, Philippines	World Fish	TBC

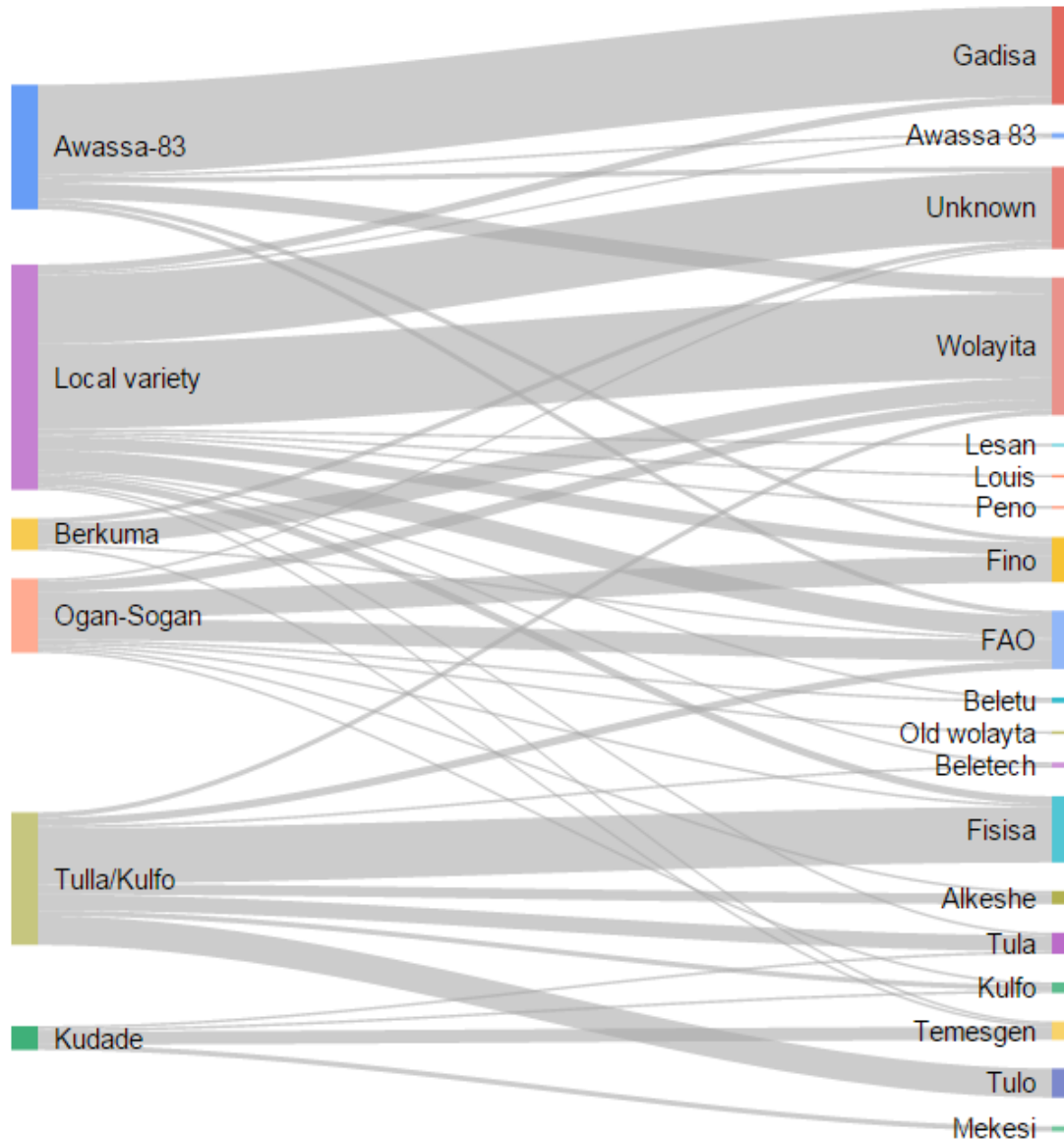




# Sweet potato, Ethiopia (SPIA / Diversity Arrays)

Inconsistent mapping of local names to genotypes makes adoption survey data unreliable

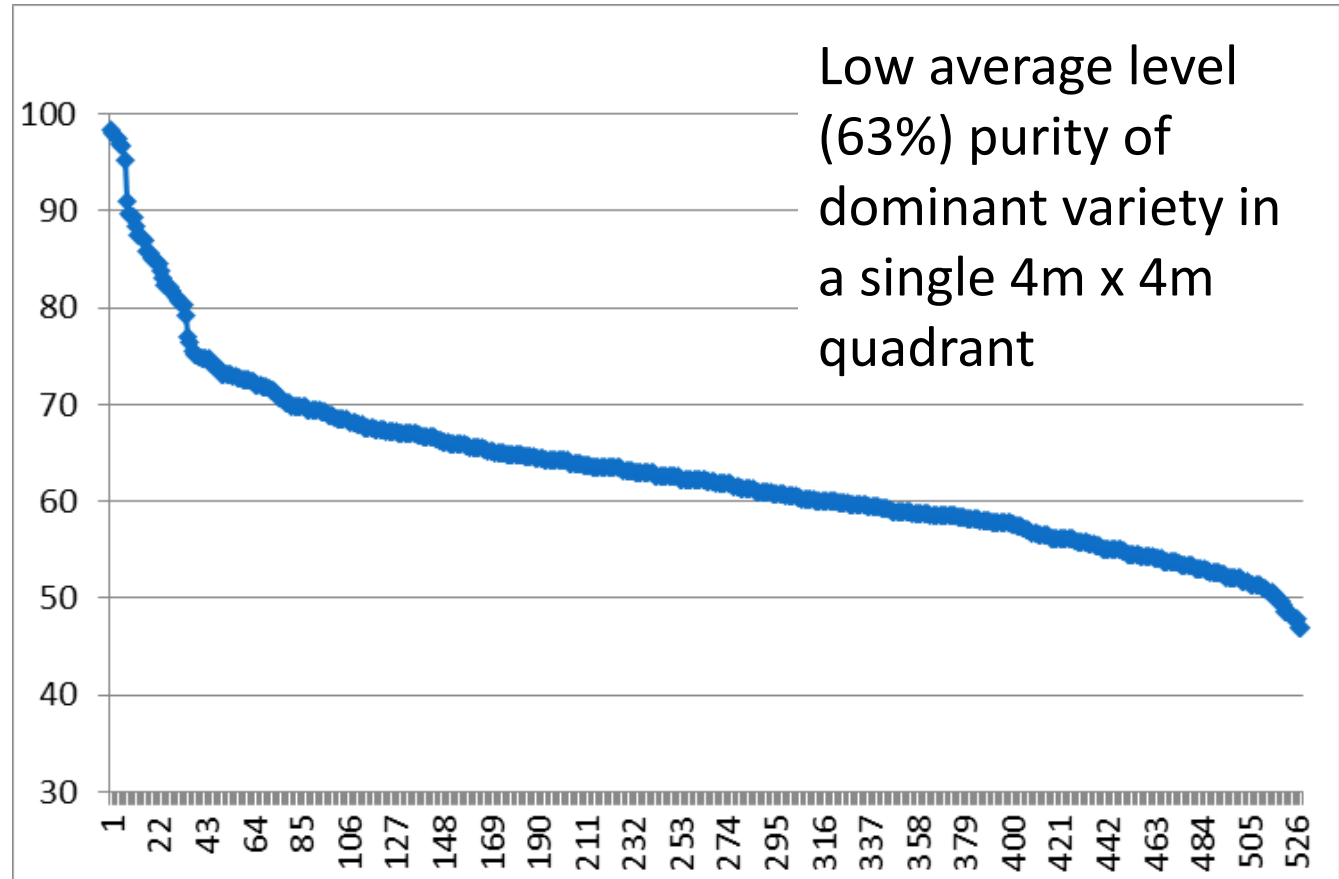
**Genotypes:**  
DNA tells us which variety it is



**Farmer statement:**  
Their knowledge of which variety it is

# Maize varieties, Uganda (SPIA / World Bank / Diversity Arrays)

% purity of  
dominant  
variety in the  
plot



Maize plots in sample

- Pattern emerging that there is no consistent direction of the bias for adoption – the errors are in both directions
- Argues for routine use of DNA fingerprinting as other methods unreliable
- Genetic Gains platform proposes laboratory architecture for DNA extraction and fingerprinting
- Raises significant issues for impact assessment:
  - Potential blurring of impact estimates
  - Are we understating the levels of adoption? Overstating?
  - Implications for impact – but also for strategy

**Surveys** - Definition and measurement of multiple components of complex packages of NRM practices

Experimentation with going beyond simple survey questions – are there reliable protocols that can improve survey response validity?

**Remote sensing / drones**

Which practices can we detect reliably? Which can we not?

- Competitive call for proposals Sept – Dec 2015
- Workshop Dec 2015 (40 people, focus on measuring adoption of 6 NRM practices)

# Adoption of NRM practices call

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Practice	Countries	Lead	Methods
Conservation agriculture (CA)	Mozambique, Zambia	CIMMYT	EE, Panel survey data
CA	Malawi	NMBU	Panel survey data
CA / Agroforestry (AF)	Malawi, Zambia	FAO	Panel + RS
Fertilizer micro-dosing / CA	Zimbabwe, Niger	ICRISAT	Panel survey data
CA	India	IFMR	New survey + RS
CA	Mexico	CIMMYT	RS
Alternate Wetting and Dry (AWD)	Vietnam	Nong Lam U / UCSD	New survey + RS
AF	Kenya	ICRAF	RS + existing survey
Integrated Soil Fertility Management	Kenya, Rwanda, Zambia	IFPRI	Panel + SMS survey

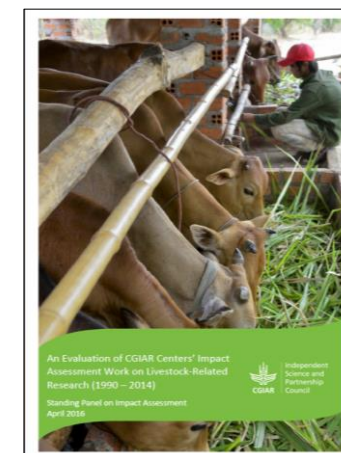
## Long-term or large-scale impacts

<http://impact.cgiar.org/>

Widely-adopted technologies call – Funded proposals	Proponents
Adoption and Diffusion of <b>Cooperation 88</b> Potato Variety in China: Spatial Variability of Productivity Gains and Cost Savings and Value Chain Development	CIP Virginia Tech Yunnan Normal Univ.
Using <b>Global</b> Agricultural, Health & Demographic Datasets to Identify Impacts of CGIAR's Modern Seed Varieties Since the 1960s	UC San Diego George Washington University
A Systematic and <b>Global</b> Assessment of the Impact of CGIAR Technologies on Poverty	IFPRI World Bank
Assessing the impacts of improved <b>cassava</b> varieties on poverty reduction in Nigeria	IITA
Estimating improved <b>tilapia adoption</b> using DNA fingerprinting: Philippines and Bangladesh	WorldFish
Influence of IFPRI's research results on intra-household decision-making and <b>gender</b> roles on field programs of large NGOs	TANGO
Adoption of improved <b>lentil varieties</b> in Bangladesh	ICARDA Virginia Tech

## Reviews of IAs of irrigation management & livestock research in the CGIAR

- As a part of efforts to expand evidence base for previously under-evaluated areas
- Two scoping studies commissioned, externally reviewed
- Irrigation: 32 case studies submitted, Apr 2015
  - 14 qualified as IAs of irrigation and water management *research*
- Livestock: 159 studies submitted, Apr 2016
  - 12 passed the authors' self-defined cut-off, informed by SPIA quality review criteria
  - Possibly more studies in category 2 (micro) that add to the evidence base





### Reviews of IAs of irrigation management & livestock research in the CGIAR – Findings

- Neither finds much published or unpublished evidence credibly documenting impact from past investments.
- Does not imply ‘no impact’ or that investments have been unjustified; these studies were not asked to evaluate that proposition and could not have done so.
  - In case of livestock, SPIA recognizes that some of the micro-studies may offer useful (and credible) analysis of farm-level impacts
- Both studies underline the need to improve documentation of adoption and impact, both in terms of quality and coverage.

## IAs of under-evaluated areas of research call (Dec 2015)

Project/country	Institutions
Forest Co-management in Guinea: a Multi-scale, Multi-output ex-post Impact Analysis	Virginia Tech CIFOR
Adoption and Impact of Alternate Wetting and Drying (AWD) Water Management for Irrigated Rice in the Philippines	North Carolina State University, IRRI, NIA
Assessing the Adoption and Economic and Environmental Impacts of Brachiaria Grass Forage Cultivars in Latin America Focusing on the Experience in Colombia	CIAT, MSU, CORPOICA
Assessing the Downstream Socioeconomic and Land Health Impacts of Agroforestry in Kenya	ICRAF, Vi Agroforestry, University of Illinois

## External review and quality rating system & Discussion board on IAs

- *Online review and rating system*: launched, Mar 2016. Objective is to directly influence the quality of CGIAR epIAs.
  - Communicated to Center/CRP IAFPs. No submissions or feedback yet.
- *Discussion board*: outcome of the IA workshop organized by Kathy Baylis and team in Nairobi, 2016 as a part of SIAC 4.2.
  - Primarily targets workshop participants, but open to other researchers in the CGIAR.
  - Information sharing mechanism – to continue exchange beyond the workshop.
  - Secondary objective – promote collaboration on surveys (200K surveys per year estimate)

# Overview of partners

SIAC activities 1.2, 2.1, 3.0, 3.1, 3.2, 3.3 & 4.2

<http://impact.cgiar.org/>

Universities	CGIAR Centers/CRPs	NGOs/public/private sector
Berkeley	Bioversity	Diversity Arrays
Columbia	CIAT	Innovations for Poverty Action
Geneva	CIFOR	LGC Group (Genomics)
Gottingen	CIMMYT	EIAR
GWU	CIP	TANGO
Illinois-Urbana-Champaign	ICARDA	BFAR. Philippines
Lilongwe	ICRAF	NRCRI (National Root Crops Research Institute Nigeria)
	ICRISAT	ZARI
MSU	IFPRI	Vi Agroforestry
NCSU	ILRI	
UCSD	IRRI	
Uniandes	IITA	
Virginia Tech.	IWMI	
Yale	WorldFish	
<b>US \$ 2.35 mn</b>	<b>US \$3 mn</b>	<b>US \$ 432K</b>

## How best to synthesize?

SPIA's priority for last few years – increased rigor of impact assessment

First synthesis report: “The rigor revolution in impact assessment of agricultural research” – Aiming for Sept 2016 draft

Quality rating of impact information: How to operationalize?  
Need for “evidence audits” of impact claims stronger than ever?

Still far from the ideal of evidence-based policy-making in CGIAR but that is still the goal...

- Internally-commissioned external review of SIAC, with IEA oversight, August 2016
- *Learning for adoption*, Ferdi/SPIA/Cerdi, Jun 1-2, Clermont-Ferrand, & mid-term workshop on nutrition and experimental studies (activity 3.0 and 3.2), Jun 3
- *Impact Assessment Focal Point (IAFP) meeting*, Jul 29, Boston
- Mid-term workshop - long-term, large-scale IAs (SIAC 3.1), Jul 30, Boston
- At the AAEA, Jul 31-Aug 2, Boston
  - *Virginia Tech session on IAs*, incld. CIP and CIFOR work
  - Univ. of Illinois (Jeff Michler) panel on *identification*
  - Berkeley (Alain de Janvry) panel on *adoption*
- IFPRI/MSU/SPIA workshop on *recent developments in measuring adoption of agricultural technologies*, Aug 3-4, Boston

## 2. Future SPIA priorities

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- Meeting at IFPRI in March 2016 to discuss priorities with USAID, Gates and DFID + range of impact assessment experts
- Current Strengthening Impact Assessment in the CGIAR grant (Gates and DFID) ends mid-2017
- Working towards new program of work for CRP Phase 2
- 8 areas identified...



# 8 possible Focus Areas

<http://impact.cgiar.org/>

1. **DNA:** Large-scale surveys combining DNA fingerprinting of crop varieties with socioeconomic data
2. **NRM:** Baseline surveys to document the adoption of NRM practices in agriculture / forestry / land management
3. **Policy claims:** A database of claims of policy influence resulting from CGIAR research
4. **Impacts:** *Ex-post* impact studies of adoption of CGIAR-derived technologies / practices / policies
5. **Better trials:** Improving the prediction of technology success in farmers' fields
6. **Capacity-building:** CGIAR staff / management for impact assessment
7. **Communication:** Better targeting of impact assessment messages, with the goal of increasing its use by CGIAR decision-makers
8. **Methods:** Piloting new tools and methods as proof of concept - a CGIAR-wide public good



## SPIA comparative advantage

- Objectivity/independence
- Experience in conducting and completing large-scale system-level analysis
- Demonstrated record in curating and publishing data from these studies
- Ability to take advantage of economies of scale across crops and to merge biological data with socioeconomic data
- Resources that are not tied to projects and that can thus be committed over relatively long periods of time; e.g., for data collection
- Robust connections with LSMS-ISA and by extension to national statistical systems
- Strong connections to external researchers who will be valuable in figuring out issues of measurement and impact assessment

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