

SPIA Activities Update

*Prepared for SPIA 42 (20-22 Aug 2012) and ISPC 6 (26 – 29 Sept 2012) Meetings
ILRI Campus, Addis Ababa, Ethiopia*

This progress report provides a brief background and update on SPIA activities since the SPIA 41 and ISPC 5 meetings held at NASC campus, New Delhi, March 2012. Activities are described under i) on-going studies, and ii) communication and outreach activities. Conclusions emerging from the SPIA 42 meeting will be reported verbally by the SPIA Chair at ISPC 6 on 27th Sept 2012.

SPIA 42 will be the first meeting under the chairmanship of Doug Gollin. Under Doug's leadership, the modus operandi of SPIA is shifting from having two members who each give a significant amount of their time, to a more flexible mode of appointing SPIA Associates. This will be a larger group of people engaging with SPIA in a more targeted, focused role for specific studies. They will not all attend each SPIA meeting, with most of the communication to be done over group Skype calls. We think that this move reflects the changing demands being made of SPIA, with a greater range of specialist skills now being called on across different disciplines and focusing on the full range of agricultural research outputs from the CGIAR under the CRPs.

I. On-going Studies

1.1 Advancing Ex-Post Impact Assessment of Social Impacts of CGIAR Research

As a driver of broad-based technological change in agriculture, research to improve agricultural productivity can help contribute to reducing poverty in several ways. It can help reduce poverty directly by raising the income or home consumption of poor farm households who adopt the resulting technological innovation. Adoption of technologies can also help reduce poverty indirectly as a result of: a) the effect on the real incomes of others, via lower food prices for consumers; b) increased employment and wage effects in agriculture; and c) the stimulus agriculture has on other sectors of economic activity through production, consumption, and savings linkages. While some work has been done in the past attempting to document these impacts (see [recent SPIA report](#) reviewing the empirical literature on the impact of agricultural research on poverty), the net effect of these alternative impact pathways for different groups of households with different technology-environment combinations is a complex question and in need of further study and greater fundamental understanding.

The goal of this study is to assess how technical change in agriculture may have differential effects on different indicators of well being, including poverty levels, hunger and food security, and nutrition. There have been a number of advances in empirical economic work over the last ten years that can be brought to bear on this complex technology-poverty-food security issue. These innovations include a significant growth in the use of experimental and non-experimental methods in development economics (see [recent SPIA-commissioned review](#)); advances in both the amount of household data and the techniques for analyzing these data; new spatial maps of poverty at sub-national levels; and a range of applications of general equilibrium models under different scenarios. It is important that impact assessment in the CGIAR uses the best available methods to achieve high standards for rigour, and SPIA is keen to explore the potential to draw on and use these new innovations to that end.

The four studies commissioned under this study, which all run until mid-2013, are as follows:

- WorldFish: “Moving along the impact pathway: Improved methods for estimating technology adoption and impact: case of integrated aquaculture-agriculture in Bangladesh” \$150,000
- CIMMYT: “Measuring the poverty and food security impacts of improved maize in Africa: A combined econometric and micro – economy-wide modeling approach” \$250,000
- IRRI: “Assessing the poverty and food security impacts of IRRI contributions to modern varietal replacement in Bangladesh, India, Indonesia, and the Philippines during 1990-2010” \$200,000
- Assessing the impacts of food staples research on income growth, poverty reduction and household nutrition in Ethiopia (IFPRI working with CIAT, CIMMYT, CIP, ICARDA and ILRI) \$300,000

A mid-term workshop took place at London International Development Center, 8th and 9th May 2012. The case-study leaders presented progress to date and received feedback on their plans for finalizing the study from SPIA members and a number of invited external participants. Each of the case study leaders submitted brief progress reports following the mid-term workshop indicating what changes they would make in response to the critique they received.

Bhavani Shankar will be working on a paper reviewing issues relating to measurement and causal identification in studies of nutrition impact. An outline of this paper has been discussed by SPIA and the paper will be written by the end of December 2012. This paper can serve as an introductory chapter in a final report on this study, to be compiled in 2013 once the case-studies are all complete. Similarly, Tim Kelley will be working on a draft of a review of the literature on ex-post assessments of poverty impacts of agricultural research, to be completed early in 2013.

1.2 Tracking Varietal Change and Assessing the Impact of Crop Genetic Improvement Research in Sub-Saharan Africa

The Evenson and Gollin (2003) study, using data from the mid to late 1990s, found that in Sub-Saharan Africa, only 10% of the area devoted to the main CGIAR crops was planted with modern varieties. It has often been asked what progress has been made since then. While basic data on adoption and impact of improved crop varieties should be collected on a regular and systematic basis and made widely available through integrated and easily accessible databases, such has not been the case. Indeed, if crop improvement research is considered the major CGIAR success story, even today, it is essential to update the original Evenson and Gollin study. In late 2009, SPIA accepted a request from the Centers and from the BMGF to guide and oversee a major 3-year, \$3.0 million project to update and document information on varietal diffusion and impact of improved varieties of major crops across most countries in SSA. There are three major components to the project: (i) widening understanding of key aspects of genetic improvement; (ii) deepening the understanding of varietal adoption; and (iii) gaining a more comprehensive and deeper understanding of the impact of varietal change. The project commenced in November 2009 and will run until December 2012. Bioversity International is the recipient organisation for the grant on behalf of the CGIAR System. SPIA chairs the Project Steering Committee (PSC). The PSC meets virtually every two or three months to receive updates from the project coordinator Tom Walker who interacts closely with the seven participating Centers on a regular basis.

Progress on each of the 3 major objectives were reviewed at the 15th Meeting of the PSC on 3rd August 2012. A number of action points were recorded related to:

- Attempting to fill a limited number of missing crop x country combinations to follow-up ASAP for Objective 1 data (maize in Tanzania; maize in Zimbabwe; rice in Mali)
- Agreement to appoint Tony Murray to act as consultant to integrate the database into the ASTI website
- A reminder to go out to all Centers to submit revised Objective 1 and Objective 2 reports no later than 30 August, and to give an early reminder of the Objective 3 reports due at the end of September.
- Mywish Maredia in consultation with Center participants to develop a plan for moving forward on Objective 4
- Planning for the final workshop in Rome on 8-10 November at Bioversity International in Fregene.
- The third technical and financial report, summarizing progress over the past year, will be submitted to BMGF by the end of September.

1.3. Impact of Legume Improvement Research in the CGIAR

As part of its new operational model, SPIA will over the next three years commission Systemwide *ex-post* impact assessments in broad thematic areas of CGIAR research which to-date have not been evaluated but for which anecdotal evidence suggests considerable impact, e.g., legume improvement research, livestock management research, irrigation management. SPIA will commission an external team to assess the cumulative impacts of legume improvement research across the system to better understand and document impacts of CGIAR research on pigeonpea, chickpea, lentil, lathyrus, common bean, soybean and cowpea in terms of their economic, social and environmental impacts in specific regions of the world. Legumes are likely to show especially important impacts on gender equity, nutrition, and sustainable soil management. While the external team will be leading the impact assessment research, analysis and write-up effort, it is anticipated that scientists at ICARDA, ICRISAT, CIAT and IITA will play a key role here interacting closely with the team, in particular, contributing critical adoption, yield and price data and, in some cases, preliminary analyses.

In 2011, it was agreed that there are three or four priority cases for investment in this study, each of which may require a slightly different orientation and emphasis depending on how comprehensive and reliable adoption data is at this point (adoption data is now understood to be the highest priority), and hence budgets. These are:

- 1) *Cowpea in Nigeria*
- 2) *Chickpea and/or Pigeonpea in India*
- 3) *Pigeonpea in East Africa*

Three other cases were discussed that merit further attention for including in the final report:

- 4) *Chickpea in Turkey and Syria*
- 5) *Beans in Rwanda and Uganda*
- 6) *Beans in Latin America*

In the period since SPIA 41, there have been significant efforts to integrate protocols into the LSMS-ISA surveys in two countries (Tanzania and Nigeria) for two crops (Pigeonpea and Cowpea, respectively), and two new surveys have been commissioned in India.

Cowpea in Nigeria

A protocol for varietal identification of cowpea has been developed and integrated into the LSMS-ISA surveys in Nigeria. A total of seven questions have been inserted in the questionnaire, which will be part of the nation-wide survey round in October / November 2012. The questions will allow us to identify improved vs. traditional varieties as a class, owing to the fact that more than 90% of improved varieties are upright in habit, whereas more than 90% of local varieties are spreading in habit. Challenges remain regarding the use of land for cowpea grown as an intercrop, and how this relates to data we are interested in such as yield. However, we should be able to get a good overall picture for the first time, of the extent of spread of improved varieties across the country.

Pigeonpea in Tanzania

SPIA commissioned Sarah Mine to pilot-test a varietal identification protocol for pigeonpea, developed by ICRISAT East Africa, in six districts in Tanzania. Each of the study districts had previously been the target of pigeonpea dissemination and improvement projects, or had experienced notable spillover effects from such projects. This study revealed discrepancies between expert classifications of pigeonpea varieties and protocol-based classifications with farmers. Perhaps more importantly, the study showed significant discrepancies within expert classifications of pigeonpea varieties suggesting that wider testing and comparison of expert varietal classifications is needed. If discrepancies are indeed widespread, the use of future expert opinion surveys to estimate proportions of improved varieties may be called into question.

Chickpea in India

a) Madhya Pradesh

SPIA have commissioned the National Center for Agricultural Economics and Policy Research (NCAP) in India to carry out a varietal adoption survey of chickpea in Madhya Pradesh and, to the extent feasible, estimate the productivity related impacts of adoption (yield performance and other desirable characteristics—disease resistance, earliness, etc.). Data collection runs until the middle of October 2012, and we will have a final report in February 2013.

b) Andhra Pradesh

SPIA have commissioned the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India to carry out a varietal adoption and farm-level impact survey of chickpea in Andhra Pradesh. Data collection runs from October to December 2012, and we will have a preliminary report of early results by late February and a final report in July 2013.

1.4 Assessing the impact of CGIAR investments in germplasm collection, conservation, characterization and evaluation (GCCCE)

The aim of this study is to measure and value (to the extent possible) impacts related to GCCCE related activities by the CGIAR. As past efforts in this sort of assessment have been limited in scope, scale, data and methods, one of the key objectives of this study will be to propose a conceptual framework and set of methods that might be applied in future efforts to estimate these types of impacts. The perspective taken with respect to valuation is derived from the concept of total economic value, which embraces multiple sources of value. An earlier scoping study by Smale and Hanson (2012) reviewed the conceptual and empirical literature to-date, highlighting the different types of direct and indirect use and non-use values that can result from GCCCE activities and outcomes. At the same time there is very little empirical

evidence of the impact from investment in GCCCE, even in strict economic terms. Phase 2 of this study focuses on three GCCCE impact case studies with the objective of building up evidence of impact from this relatively under-evaluated area of CGIAR investments, i.e., mainly as a proof of concept, rather than showing an overall positive B-C ratio for this investment. The three case studies focus on instances of investment in GCCCE activities that have led to direct-use values being realised, mostly via the contribution of germplasm from genebanks with specific economic traits that have been incorporated through breeding into commercial varieties adopted on a significant scale. Consultants Jonathan Robinson and Srinivasan, who are working closely with CIP, CIAT and CIMMYT Center scientists and economists on the case studies, have recently submitted to SPIA revised versions of the CIP and CIAT case study reports. The 3rd case study focusing on resistance to Russian Wheat Aphid in wheat has been dropped for lack of data. The revisions seek to address a number of key challenges in these types of difficult-to-measure impacts from GCCCE activities. These relate to clearer specification of the GCCCE activity and its linkage to other critical research outputs and outcomes along the impact pathway, establishing the appropriate counterfactual, attribution issues and correct measurement of benefits and costs. Data limitations are also a major constraint. SPIA members will review these final drafts and plan to finalize these case studies by end of November.

1.5. Strengthening impact assessment and accountability in the CGIAR System

This is a major initiative for SPIA, expected to commence in 2013, but requiring considerable effort by SPIA and partners in 2013 in terms of planning. It responds to concerns among a number of donors about two issues related to impact assessment in the new CGIAR: (i) the real risk that epIA will be dropped while we await impacts from the new CRPs—continuing the work on *ex post* impacts based on the pre CRP era will be needed for many years by donors and other stakeholders; and (ii) the need to build on the experience of SPIA and the Centers in impact assessment in terms of setting up results indicators and baselines in the new CRPs.

After discussions with the Bill and Melinda Gates Foundation (BMGF), DFID, EU and IFAD, we have prepared and submitted through the CGIAR Consortium (formal grantee) a three-year (2013-2015), \$12.1 million proposal to BMGF for partial funding (\$5.0 million), with the potential for transition to become a multi-donor trust fund in perpetuity. We will submit further proposals for other components of the funding to the other donors over the coming months.

This initiative is intended to provide donors and other stakeholders with up-to-date evidence of the efficacy of investing in international agricultural research, and at the same time building capacity within the System to undertake regular epIA for tracking implementation of the new CRP portfolio against SLOs. We will work with three main partners in the first three-year phase of the project – Michigan State University, CGIAR Centers and CRPs, and the World Bank Living Standards Measurement Survey Integrated Surveys of Agriculture (LSMS-ISA) team.

Four major objectives relate to:

- Methodological experimentation – looking at ways in which we can raise the efficiency with which outcome and impact data are collected for the CGIAR
- Outcomes – focusing on widespread collection of data on adoption of CG-derived crop, livestock and NRM technologies on a regular basis to support the new CGIAR's M&E

- Impacts - focused on deepening the understanding of the impacts of CG research on targeted and non-targeted groups through competitive grants program for specific topics
- Capacity building - focused on strengthening capacity with CRPs/Centers to conduct high quality epIA of CG research via training resources, conferences, small grants and maintaining the <http://impact.cgiar.org> website

II. Communication and Networking Activities

2.1 Pre-conference workshop at the International Association of Agricultural Economists (IAAE) meetings, Foz do Iguacu, Brazil, 18th August 2012

SPIA held a very successful one-day workshop entitled: “Innovations in impact assessment of agricultural research: Theory and practice”, immediately prior to the ICAE meetings, in Foz do Iguacu, Brazil on 18th August 2012. We had more than 60 people attend the workshop, and a stimulating agenda which prompted a lot of very good questions and debate about some important topics in impact assessment. Out three invited speakers (Tavneet Suri, MIT; Joaquim Bento de Souza Ferreira Filho, University of Sao Paulo; Keith Fuglie, USDA) all did an excellent job in setting in context some of the recent developments in micro, macro and ex-ante methods (respectively). A panel of donors (USAID, DFID, ACIAR and the Bill and Melinda Gates Foundation) provided a lively perspective on the importance to donor commitment of maintaining a rigorous catalogue of impact assessment studies, with wide coverage across the research portfolio of the CGIAR.

The quality of the presentations from the contributed papers was high (following a very competitive call for papers launched in December 2011). Of 14 authors initially invited to develop papers for the workshop based on the call, we had 13 papers presented, with full drafts available to the discussants before the workshop. SPIA was very pleased with this conversion rate, and the input from the discussants has proved very useful in giving feedback to these authors as they revise their papers. The majority of authors will now submit their papers for consideration for a special issue of Food Policy journal, organized around the workshop.

2.2. SPIA-Impact Assessment Focal Point (IAFP) meeting

On the afternoon preceding the pre-conference workshop at the IAAE meetings, SPIA organized a joint meeting with IAFPs from 13 of the 15 CGIAR centers. A number of other stakeholders also attended, in particular donors from several agencies. Although the meeting was brief (half day), it provided an opportunity for learn about some of the recent impact related initiatives at the Centers/CRPs and with SPIA. There were dedicated sessions to discuss a perennially debated issue – cherry picking vs random sampling approaches in impact assessment – and to get an update on progress with the draft proposal to BMGF on “Strengthening Impact Assessment in the CGIAR” (SIAC). Discussions were very useful in providing feedback to strengthen the proposal, encourage collaboration and decide on next steps.

2.2 Publications

There are no new 'green cover' publications since SPIA 41, but a paper emerging from the Environmental Impact Assessment study has just been published in *Research Evaluation*: Bennett, Kelley and Maredia (2012) "Integration of environmental impacts into ex-post assessments of international agricultural research: Conceptual issues, applications and the way forward". There are three papers in the pipeline on land-use and technological change – a spin-off from the environmental impacts study – as well as the special issue on Food Policy (see item 2.1).

2.3 Website

The <http://impact.cgiar.org> website had 1,149 visits in the month of August 2012, down from 1,511 visits in February 2012, but showing a year-on-year improvement when compared with the 498 visits of August 2011. A lot of new content is being developed for the site, with link-ups to the DIIVA data which will be hosted on the ASTI website.

2.4 Participation in external events

James Stevenson presented SPIA's paper on agricultural technology and land-use change in a symposium entitled "Agricultural productivity, climate impacts and adaptation: Implications for global land use and GHG emissions". The symposium was organized by Tom Hertel, Purdue University, and is part of the forum "Land use in transition: Potentials and solutions between abandonment and land grabbing" to be held in Halle, Germany, 20 – 22 June 2012.

James Stevenson also presented the same paper at the Climate Change Study Circle at FAO on 9th July 2012.