

Dry Grain Pulses CRSP

IMPACT ASSESMENT PROJECT

(October 1, 2009 – September 28, 2012)

Project Title: *Impact Assessment of Bean/Cowpea and Dry Grain Pulses CRSP Investments in Research, Institutional Capacity Building and Technology Dissemination in Africa, Latin America and the U.S.*

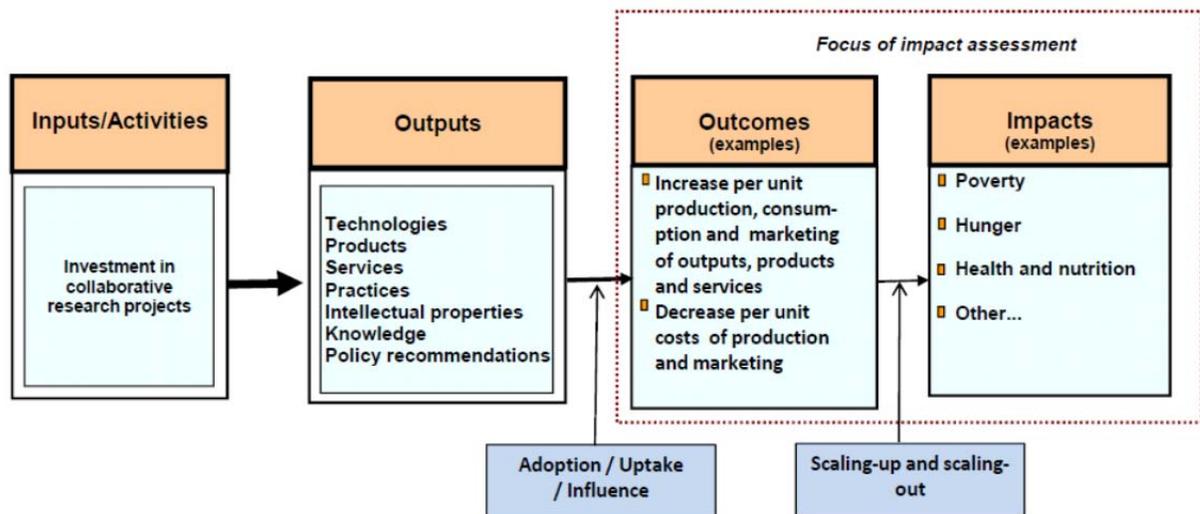
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Project Description:

The Dry Grain Pulses CRSP has adopted a simplified impact pathway model to conceptualize how investments affect developmental outcomes and impacts (Figure 1). This model also introduces the concept of an ‘impact assessment,’ which is defined as ‘the systematic analysis of the significant or lasting changes—positive or negative, intended or not – in people’s lives brought about by a given action or series of actions in relation to a counterfactual.’

Figure 1.



Arrows in the impact chain indicate the direction of influence and its thickness indicates level/degree of influence on an effect

Definitions:

Inputs: The financial, human, and material resources used for the research intervention.

Outputs: Include changes resulting from the research which are relevant to the achievement of outcomes; manifested in technologies, products, capital goods, services, practices, knowledge, policies and information.

The research inputs from the past, ongoing and proposed activities are conceptualized to generate outputs in the form of technologies and practices, goods and services, intellectual properties and policies that are relevant to bringing about changes in the use of farm- and community-level resources and assets (i.e., land, labor, capital, entrepreneurship) to increase per unit production or marketing of outputs, products and services, or decreased risks and per unit costs at the farm household level (referred in Figure 1 as project outcomes). The realization of projected outcomes requires adoption/uptake of research outputs at the end-user level (farmers, processors, consumers). Impacts on developmental goals (such as poverty, environmental sustainability, food security, health, etc.) are realized when the outcomes are sufficiently scaled up and scaled out to a large number of beneficiaries.

Impact assessments are widely recognized to perform two functions--accountability and learning. Greater accountability (and strategic validation) is seen as a prerequisite for continued support for development assistance. Better learning is crucial for improving the effectiveness of development projects and ensuring that the lessons from experience – both positive and negative – are heeded. Accountability and strategic learning has long been core concerns for ex-post impact assessments.

In the remaining three years of the current grant (FY 2010-2012), this project will focus on ex post impact assessment and project impact evaluation as described below.

Proposed Impact Assessment Activities:

1. Ex-post Impact Assessment

The nature of the results chain (or impact pathway depicted in Figure 1) of a ‘research’ intervention is generally more complex due to long and unpredictable lags between when the research is conducted to when the outputs, outcomes and impacts are realized. Given the long lags between research inputs and outcomes and impacts, the focus of the proposed ex-post impact assessment activities will be on outputs from research supported by the Bean/Cowpea CRSP. However, where feasible, impacts of investments by the Dry Grain Pulses CRSP in continuing past research activities will be included in the impact assessment portfolio.

For FY 10-12, the MO is proposing to conduct three to four ex-post impact assessments that enables the Dry Grain Pulses CRSP to “tell a story” of effective contributions of CRSP’s research efforts to developmental impacts and institutional capacity building. Some likely candidates for ex post impact assessment include:

- Benefits of genetic improvement of cowpea in Senegal and West Africa. Over the past 20 years, due to collaborative efforts of CRSP researchers, several varieties of cowpeas with resistance to biotic and abiotic stresses have been released in Senegal and other countries in West Africa. A study is proposed to document the adoption of these varieties and to document the economic costs and benefits attributed to CRSP-NARS investments in these improved varietal technologies.
- Documentation (synthesis and update) of the social, economic and environmental impacts of the cowpea grain storage technologies in West Africa. The recent dissemination efforts by the Bill and Melinda Gates Foundation offers an opportunity to update and synthesize the impact story of the CRSP developed triple bagging and other storage technologies in West Africa.
- Synthesis and update study on the impact of CRSP’s bean improvement efforts in the LAC region. The past Bean/Cowpea CRSP and the current Dry Grain Pulses CRSP have played an

important role in supporting the bean improvement research efforts in the Latin America region (esp., Central America, the Caribbean region and Ecuador). Several studies conducted in the past have documented the adoption and economic impacts of the outputs generated by the bean improvement research in this region. The proposal is to update the adoption and economic impact estimates of CRSP varietal technologies in the past 3-5 years.

- Global contribution of CRSP to genetic improvement of common bean (including the U.S., LAC and SSA). The Bean/Cowpea CRSP supported bean breeding programs in the U.S. and in host countries have contributed to the genetic improvement of common beans in the form of direct varietal releases as well as indirect contributions to the gene pool present in the pedigree of released varieties. This second type of contribution of CRSP-supported research in molecular breeding and other advanced techniques can be seen today throughout the bean producing regions of the world, including the U.S. A potential study proposed will take a stock of all the genetic contributions of the research supported by the bean/cowpea and the Dry Grain Pulses CRSP and estimate an economic value of such contribution in terms of value addition to genetic materials grown by bean farmers around the world.

The approach to be used in the proposed ex post impact assessment is the cost-benefit analysis framework, where benefits will be estimated as a function of the size of the effect of an improved technology/product/practice as a result of CRSP research and the scale of adoption/use/uptake of a given CRSP output. The impact estimation approach will involve making theory-based assumptions about the underlying relationships between model parameters, and then estimating total benefits which are compared with total costs (including partner costs) to derive rates of return (ROR) on research investments. The emphasis in ex post impact assessment will be not as much on precision of impact estimates as it will be on the range of plausible impacts. Sensitivity analysis based on different scenario and assumptions about key model parameters will be also part of impact analysis.

2. Meta-Benefit Cost Analysis of Bean/Cowpea and Dry Grain Pulses CRSPs

The Management Office also proposes a meta-cost-benefit analysis of the documented impacts of the Bean/Cowpea and Dry Grain Pulses CRSPs in the final year as described below.

Meta-benefit-cost-analysis can be defined as an aggregate benefit-cost analysis to identify generalized patterns from case observations (Maredia and Raitzer, 2006). Just as the traditional meta-analysis approach, this method attempts to assemble as broad a pool of cases as possible from which to draw inferences and derive generalizable results. However, unlike the more common approach to meta-analysis, which typically uses statistical analysis techniques (e.g., regression) of pooled data, the meta-B-C-analysis is a simple aggregation of benefits and costs derived from case studies (i.e., published or completed ex post impact assessments of CRSP research) and applying the general framework of benefit-cost analysis to estimate the rates of return across a portfolio. Such an approach is warranted due to the fact that each of the impact studies measures a separate but partial aspect of the response of a dependent variable (economic benefits) to a shared exogenous variable (total investment). The proposed meta-B-C-study will help ‘tell the impact story’ of the bean/cowpea and the Dry Grain Pulses CRSP in a comprehensive manner and will help identify areas of research that have had greatest impact and those that have had modest impacts or turned out to be ‘dry holes.’ This will be an analysis of the global program and should provide valuable information for the Final Technical Report of the Dry Grain Pulses CRSP and to USAID as it decides on a five-year extension of the program through 2017.

3. Pulse CRSP Project Impact Evaluation

To better assess the effectiveness of an on-going or planned CRSP intervention that is designed to achieve developmental outcomes, the MO proposes to integrate impact evaluation as part of the intervention. Examples of such interventions include technology transfer projects which are planned with the aim to generate impacts in the next 2-3 years. To measure the effectiveness of CRSP supported interventions so that lessons can be derived prior to scaling up activities, and to assess realized and potential impacts of such development efforts, it is essential that impact evaluation is integrated as part of the design of the intervention. Impact evaluations help measure the effect of a program in relation to a counterfactual. Well thought out and planned impact evaluation as part of the project design can help identify the appropriate treatment and comparison group and guide the data collection efforts well in advance to generate valid results.

Thus, as a third area of research under this component, this project will seek opportunities to conduct impact evaluations on CRSP supported interventions. The project team will help the MO identify interventions where impact evaluation can be integrated as part of the design of the intervention. Depending on the availability of funds (either as part of this project budget or through external funding), the impact assessment project team will partner with the respective CRSP project implementing teams to design impact evaluation as part of the project design and collect appropriate data that will enable the team to measure the effectiveness of a CRSP project,