

**SUMMARY
ANNUAL REPORT
2005**

**PROJECT BP1
IMPACT AND POLICY ANALYSIS**

Reporting Period September 2004-December 2005



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PROJECT BP1

IMPACT AND POLICY ANALYSIS



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BP1 2005 ANNUAL REPORT SUMMARY

1. CIAT PROJECT BP-1: IMPACT AND POLICY ANALYSIS

Project Description

Goal

To enhance performance of decision making about resource allocation in agricultural research and development (R&D).

Objective

To generate and disseminate information and tools to improve the capacity of CIAT and its partners to make efficient and effective use of resources in agricultural research and development.

Important Assumptions

- 1) Adequate funding to agricultural research and extension.
- 2) Decision makers willing to use economic analysis in research priority setting.

Target Ecoregión

none

Beneficiaries and End User

Research planners in CIAT and partner organizations who make decisions on resource allocation. All stakeholders who need to evaluate the impacts of investment in agricultural and natural resource management research and development.

Collaborators

ARIs and Universities: Institute for Development Studies, University of Sussex, UK; Maseno University, Kenya; Universidad de los Andes, Colombia; University of Florida, USA; University of Hohenheim, Germany; University of Maine, USA.

CGIAR Centers, CPS, SWPs and Ecoregional Programs: Centro Internacional de la Papa (CIP); Consorcio para el Desarrollo Sostenible de los Andes (CONDESAN); Challenge Program on Water and Food (CPWF); HarvestPlus Challenge Program (H+); International Center for Research in Agroforestry (ICRAF); International Food Policy Research Institute (IFPRI); International Institute of Tropical Agriculture (IITA); International Livestock Research Institute (ILRI); Standing Panel on Impact Assessment (SPIA); Systemwide Program on Collective Action and Property Rights (CAPRI); Systemwide Program on Participatory Research and Gender Analysis (PRGA).

NARS and other Public Institutions: Corporación Autónoma Regional (CAR), Cundinamarca, Colombia; Empresa Brasileira de Pesquisa Agropecuaria (EMBRAPA), Brazil; Instituto Von Humboldt, Colombia; Observatorio, Colombia; Ministry of Agriculture, Colombia; Ministry of the Environment; Colombia; Ministry of Water and Irrigation, Kenya; Ministry of Agriculture, Kenya; Ministry of Planning and National Development, Kenya. National Environment and Management Authority, Kenya; Ugandan National Agricultural Research Organization (NARO), Uganda.

NGOs: Fundación Humedades, Colombia; Semillas de Agua, Colombia; World Wildlife Fund-Colombia; Sustainable Aid in Africa (SANA), Kenya.

Others: Corporación Ganadera (CORFOGA), San José, Costá Rica; Reforestadora de la Costa S. A. (REFOCOSTA), Colombia.

Explanation of any Project changes (with respect to previous MTPs)

The project name has been changed from “Impact Assessment” to “Impact and Policy Analysis” The change reflects an evolution in project strategy towards combining international public goods-oriented research with methods and capacity development to contribute to processes of learning and change within institutions. In addition, the new name and slightly re-phrased outputs more clearly locate the project within the research agenda defined in the new Science Council priorities, specifically Priority #5.

Project Funding

Actual Expenditures: BP1 Impact and Policy Analysis

SOURCE	AMOUNT US\$	PROPORTION (%)
<i>Unrestricted Core</i>	129,193	26%
<i>Restricted Core</i>	0	0%
		0%
Sub-total	129,193	26%
<i>Special Project Funding*</i>		
Water and Food Challenge Program	376,468	74%
Total Project	505,661	100%

* The 58K that BP1 received from HarvestPlus is reported elsewhere.

2. CIAT: BP-1 Project Log Frame (2005-2007).

Narrative Summary	Measurable Indicators (milestones)	Means of Verification	Important Assumptions
<p>Goal To enhance performance of decision making about resource allocation in the agricultural research and development sectors.</p>	<p>Performance of investment in tropical agricultural research improved.</p>	<p>Research project portfolios in tropical agricultural research.</p>	
<p>Purpose To improve the capacity of CIAT and partner organizations to allocate research resources efficiently by generating and disseminating appropriate information and tools.</p>	<p>Results of impact analysis used in decision-making and priority setting.</p> <p>Research resources allocated more efficiently (expected rate of return to CIAT research portfolios increased).</p>	<p>Scientific publications from BP-1 and other projects.</p> <p>Published planning documents of CIAT and partner organizations.</p> <p>Published minutes of planning meetings in CIAT (BOT, MT, Project Managers) and partner organizations.</p> <p>External reviews of CIAT. Data on use of tools developed at CIAT.</p>	<p>Adequate funding to agricultural research and extension.</p> <p>Decision makers willing to use economic analysis in research priority setting.</p>

Narrative Summary	Measurable Indicators (milestones)	Means of Verification	Important Assumptions
<p>Output 1 Expected impact of future research estimated.</p>	<p>2005 Potential impacts of biofortified beans and cassava on human health and productivity estimated.</p> <p>Framework developed for assessing the impact of collective action poverty in watersheds</p> <p>2007 Economic, social and ecological determinants of dietary quality at the individual and household levels estimated</p> <p>The impact on poverty of strengthening collective action for watershed management assessed empirically in several catchments of the Andes and Nile basins.</p>	<p>Project progress reports, scientific papers and presentation, data bases</p>	<p>Negotiations with Water Challenge Program completed and contract signed by end of 2004.</p> <p>Institutional and financial support for impact assessment maintained.</p> <p>The socio-economic conditions remain stable.</p>

Narrative Summary	Measurable Indicators (milestones)	Means of Verification	Important Assumptions
<p>Output 2 Impact of selected past CIAT research documented.</p>	<p>2005 The economic and institutional impact of cassava systems research in Asia documented.</p>	<p>Reports, scientific papers and publications</p>	<p>Institutional and financial support for impact assessment maintained.</p>
<p>Output 3 Tools developed to assess the impact of research, both <i>ex ante</i> and <i>ex post</i>.</p>	<p>2005 Data base on consumption of beans and cassava set by target populations for Harvest Plus</p> <p>2006 Methodology developed to assess the equity impacts of different methods of PM&E developed by CIAT projects and partners</p> <p>Ongoing Maintenance and updating of impact assessment databases and information systems</p>	<p>Papers and publications, BP1 web site</p>	<p>Institutional and financial support for impact assessment maintained.</p>
<p>Output 4 Institutional capacity for estimating, monitoring, and evaluating research impacts improved.</p>	<p>2005 Presentation in CIAT on impact assessment conceptual framework</p>	<p>Copies of reports, papers and presentations made within and outside of CIAT.</p>	<p>Sufficient institutional and financial support for impact assessment is maintained.</p>

Narrative Summary	Measurable Indicators (milestones)	Means of Verification	Important Assumptions
	<p>Finalize results of organizational culture diagnosis and its implications for center effectiveness</p> <p>2006 Establishment of working paper series on social science, with special emphasis on IA/M&E</p> <p>Ongoing Support other CIAT projects in impact assessment, e.g. for 2005 Rural Innovation, IPRA, Africa Beans</p> <p>Technical support for users of past IA tools (e.g. Modexc)</p>	<p>Actions plans and progress reports based on the results of the organizational culture diagnosis</p> <p>Participation of BP1 staff in supporting role in impact assessments and evaluations carried out by other projects.</p> <p>Working paper series, in electronic and paper form</p>	<p>Willingness of CIAT staff and partners to use efficiency criteria when making research investments</p>

3. CGIAR Output Targets report for 2005 SC Performance Measurement System

Output	Output Target 2005 ¹	Category	Achieved (yes or no) ²
Output 1 Expected impact of future research estimated	Potential impacts of biofortified beans and cassava on human health and productivity estimated	Other knowledge	Yes
	Framework developed for assessing the impact of collective action on poverty in watersheds developed	Other knowledge	Yes
OUTPUT 2 Impact of selected past CIAT research documented	Economic and institutional impact of cassava systems in asia documented	Other knowledge	Yes
OUTPUT 3 Tools developed to assess the impact of research, both <i>ex ante</i> and <i>ex post</i> .	Data base on consumption of beans and cassava by target populations	Other knowledge	Yes
Output 4 Institutional capacity for estimating, monitoring, and evaluating research impacts improved.	Appropriate and well-designed impact assessment components included in the work plans and budgets of CIAT projects and projects of partner organizations.	capacity	Yes
Output 4 Institutional capacity for estimating, monitoring, and evaluating research impacts improved.	Presentation in CIAT on impact assessment conceptual framework	capacity	Yes
	Finalize results of organizational culture diagnosis	Other knowledge	Yes

Categories of output targets to be used are: Materials, Policy strategies, Practices, Capacity, and Other kinds of knowledge.

4. RESEARCH HIGHLIGHTS

BP1 is a cross-cutting project that works with all of CIAT's research for development challenges (RDCs).

With the **Sharing the benefits of agrobiodiversity RDC**, we participated in *ex ante* and *ex post* impact studies of improved crop varieties-especially beans, cassava and forages- in Asia, Africa and LAC. In the case of HarvestPlus, we looked not only at productivity impact, but also at nutritional and health impacts, and at the economic, cultural and policy factors that can enhance or inhibit impact in different countries. We are also working on

¹ See page 3 of 2005 instructions for definition of output target.

² Provide a brief explanation of any output targets not achieved.

better understanding the benefits and costs of GMOs in developing countries, looking at the economics of GMOs research, the benefits and costs from a policy perspective, and issues of consumer acceptance.

In support of the **Improving management of agro-ecosystems in the tropics (IMAT) RDC**, BP1 contributed to several *ex ante* and *ex post* studies of the impact of plot-level soil management technologies and practices in Vietnam, Thailand and Colombia. At higher scales, the potential of compensation for environmental services mechanisms to contribute to resource conservation and poverty reduction is a topic of growing importance in BP1. An empirical model was developed this year for jointly estimating the profitability of agricultural and environmental service production, with an empirical application to carbon sequestration in the Colombian llanos. As part of joint work with the Challenge Program on Water and Food (CPWF), conceptual and empirical work was conducted on the potential impacts of cross-scale watershed management on poverty.

The *ex post* study of the impact of cassava systems research in Asia, conducted jointly with researchers from the **Rural Innovation RDC**, looked specifically at the impact of user participation. The analysis of the beef industry in Central America uses the supply chain approach promoted by the RI's agroenterprise project. Impact assessment and evaluation are important research areas within RI, especially the development of participatory and learning-oriented methods, and BP1 collaborates with methodological support on an ongoing basis.

Specific research highlights from 2005 include

* A study of the impact of a participatory research project on improving the sustainability of cassava systems in the uplands of SE Asia showed high adoption of and returns to improved cassava varieties. Adoption of soil conservation practices was lower but still significant, and in some cases it contributed to yield increases and expansion of cassava area. The relationship with area expansion suggests that the conservation practices are allowing farmers to cultivate steeper, more erosive land in a sustainable way. Perhaps the most significant finding of the study was that farmer participation had a large impact on yield that was independent of its impact via higher levels of technology adoption. Farmers who participated in the trials had higher yields, not only because they were more likely to have adopted the new technologies, but because they appear to have increased their human capital through participation in a way that allowed them to manage their farms better .

* A farm level model for analyzing joint production of agricultural products and environmental services was developed and tested for the case of agrosilvopastoral systems in the Colombian Llanos. The results indicate that the incorporation of forestry for both forest products and carbon sequestration is an economically viable option, however its success depends in large part on capital intensity of the operation. Disaggregating the results by initial capital investments shows that, under current conditions, environmental services will only be a viable option for larger, richer farmers. Policies such as the CIF (certificado incentivo forestal) that subsidize establishment and

maintenance of forests, or the pre-payment of carbon credits would make environmental service options more pro-poor.

* Estimates of the potential benefits of biofortified beans in Central America and cassava in Brazil were finalized and compared with those of other biofortified crops. Even under pessimistic assumptions beans and cassava generate positive returns, however compared to the results of crops such as rice or wheat, in populous countries such as India, they are less attractive from an economic point of view. These results suggest that the crop strategies, especially target countries, should be reevaluated.

5. INDICATORS

Referred Journal Articles and Monographs (4)

Holmann F.; L. Rivas; P. J. Argel and E. Pérez (2004). Impact of Adoption *Brachiaria* grasses: Central America and Mexico. In: *Livestock Research for Rural Development (16) 12 2004* (<http://www.cipav.org.co/lrrd/>).

Holmann F.; L. Rivas; N. Urbina; B. Rivera; L. A. Giraldo; S. Guzmán; M. Martínez; A. Medina; and G. Ramírez. (2005). The role of livestock in poverty alleviation: An analysis of Colombia. In: *Livestock Research for Rural Development (17) 02 2005*. (<http://www.cipav.org.co/lrrd/lrrd17/1/holm17011.htm>)

Rivas L. y F. Holmann. (2004). Impacto Económico de la adopción de cultivares de *Brachiaria* resistentes a cercópidos, en: *Pasturas Tropicales*. Vol. 26 No 3, Diciembre, pp. 39 –55.

Rivas L. and F. Holmann (2005). Potential Economic Impact from the adoption of *Brachiaria hybrids* resistant to spittlebugs in livestock systems of Colombia, Mexico and Central America. In: *Livestock Research for Rural Development (17) 5,2005* (<http://www.utaoundation.org/lrrd1705/holm17054.htm>)

Unpublished Working Papers (8)

Dalton T; Lilja N; Johnson N; Howeler R. 2005. Impact of Participatory Natural Resource Management Research in Cassava-Based Cropping Systems in Vietnam and Thailand. Cali, Colombia, 27p. (Working Document Nro 23, revised).

González, Carolina and Nancy Johnson (2005). Inventory of Policies in Brazil Related to Harvestplus, Working paper.

González, Carolina; Ilma Kruze; Leopoldina Sequeira; Chigeru Fukuda; Rejane Olivera and Nancy Johnson (2005). Findings of the Qualitative Survey on Cassava (*Mandioca* and *Macaxeira*) and Beans in Paraiba, Brazil, CIAT/HarvestPlus working document.

Holmann, F. y L. Rivas. 2005. Los forrajes mejorados como promotores del crecimiento económico y la sostenibilidad: El caso de los pequeños ganaderos de Centroamérica. Documento de trabajo #202. CIAT (Centro Internacional de Agricultura Tropical), Cali, Colombia

Rivas L. F. Holmann y J. García (2005). Nuevos Sistemas de Producción Agropecuaria y Servicios Ambientales: Una evaluación económica en la Altillanura colombiana. Primer borrador. Centro Internacional de Agricultura Tropical. Proyecto de Evaluación de Impacto. Cali, Colombia. Octubre.

Rivas L., P. Hoyos, E. Amézquita, D. L. Molina. (2004). Manejo y uso de los suelos de la Altillanura colombiana. Análisis económico de un estrategia para su conservación y mejoramiento: Construcción de capa arable. Centro Internacional de Agricultura Tropical. Proyecto de Evaluación de Impacto – Programa de suelos. Cali, Colombia. Junio.

Rivas L. y Molina D. L. (2005). Monitoreo de la adopción de tecnologías conservacionistas de uso del suelo en la altillanura colombiana. Primer borrador. CIAT. Proyecto de Evaluación de Impacto - Proyecto de suelos. Cali, Colombia. Diciembre.

Swallow, B., N. Johnson, R Meinzen-Dick and A Knox. (2005). The Challenges of Cross-Scale Collective Action in Watersheds, In review for special issue of *Water International* and as CAPRI working paper.

Workshop and Conference Papers, Presentation and Powers Proceedings (9)

Dalton T; Lilja N; Johnson N; Howeler R. Human Capital Accumulation and Productivity Improvements in Asian Cassava Systems: Are Participatory Research Approaches Beneficial? 24p. A selected paper presented at the American Agricultural Economics Association meeting in Providence, Rhode Island, USA, July 24-27, 2005.

Dalton T; Lilja N; Johnson N; Howeler R. (2005). Impacto de la Investigación sobre el Manejo de los Recursos Naturales para Sistemas de Cultivo Basados en Yuca, Utilizando un Enfoque Participativo en Vietnam y Tailandia" CIAT Seminar Series, 16 Noviembre 2005.

Dalton T; Lilja N; Johnson N; Howeler R. (2005). Impact of Participatory Natural Resource Management Research in Cassava-Based Cropping Systems in Vietnam and Thailand. A paper presented at the joint meeting of the Integrated Natural Resource Management Group (INRM) and CGIAR Standing Panel on Impact Assessment (SPIA) at the International Rice Research Institute (IRRI) in Los Banos, Philippines, June 13-19, 2005.

García, J.A. Tamaño de Muestra y Diseño Muestral. Capacitación a personal técnico de la Fundación Kellogg en la II Reunión técnica para la Evaluación de la línea de base. Cali, Colombia, 15-18 Febrero, 2005.

González, C, and N. Johnson (2005). The Impact of GMOs, presentation made at the workshop on Socio Economic Aspects of Use of GMOs, GEF-World Bank project, Bogota Colombia, November 2005.

Pachico, D. (2005) "Analysis of the Socio-economic Impacts of Transgenic Crops." Presented at Socio-economic Aspects of the Use of Genetically Modified Organisms, Humboldt Institute, Bogota, Colombia, November 15.

Pachico, D. (2005) "Towards a Conceptual Model of Optimal Investment in the Conservation of Agricultural Genetic Resources." D. Pachico. Presented at the International Conference on Agricultural Biotechnology Research, Ravello, Italy, July 6-10.

Rivas L. (2005). Marco Conceptual y Metodologías en procesos de Seguimiento y Evaluación del Impacto Tecnológico. Estación La Libertad, CORPOICA, Villavicencio, Colombia. Julio 29. Asesoría a estudiantes.

Rivas L. y F. Holmann. (2005). Metodología y Marco Conceptual para el Estudio de las cadenas agroalimentarias de carne vacuna en Centroamérica. Proyecto ILRI - CFC – CIAT. San José, Costa Rica. Junio 8.

6. SPECIAL PROJECTS

6.1 New Proposals Approved in 2005

Our Challenge program contracts are renewed on an annual basis.

HarvestPlus: USD58,620, all for CIAT, was approved in 2005.

Challenge Program on Water and Food. USD170K of which approximately 150K went to CIAT for shared work with PE4

6.2 Ongoing special projects

“Sustaining inclusive Collective Action that Links across Economic and Ecological Scales in upper watersheds (SCALES),” USD785,662 from CGIAR Challenge Program for Water and Food, of which USD240K goes to CIAT. USD146 of the CIAT portion was available for 2005.

7. CAPACITY BUILDING

7.1 Courses and seminars:

García, J.A. Tamaño de Muestra y Diseño Muestral. Capacitación a personal técnico de la Fundación Kellogg en la II Reunión técnica para la Evaluación de la línea de base. Cali, Colombia, 15-18 Febrero, 2005. (Sample selection and design)

González, C, and N. Johnson (2005). The Impact of GMOs, Presented at Socio-economic Aspects of the Use of Genetically Modified Organisms, GEF-World Bank project, von Humboldt Institute, Bogotá, Colombia, November 15.

Pachico, D. (2005) “Analysis of the Socio-economic Impacts of Transgenic Crops.” Presented at Socio-economic Aspects of the Use of Genetically Modified Organisms, GEF-World Bank project, von Humboldt Institute, Bogotá, Colombia, November 15.

Rivas L. (2005). Marco Conceptual y Metodologías en procesos de Seguimiento y Evaluación del Impacto Tecnológico. Estación La Libertad, CORPOICA, Villavicencio, Colombia. Julio 29. Asesoría a estudiantes.

7.2 Students

Ana Lucia Herran, Universidad Javeriana, BS

Diana Ximena Marin, Universidad Javeriana, BS
Anna Knox, Institute of Development Studies, University of Sussex, Phd

8. IP

9. STAFF LIST

James A. García, M.Sc.	Statistician/Data Base Specialist
María Carolina González, M.Sc.	Lawyer and Economist, Research Assistant
Nancy Johnson, Ph.D.	Economist and Project Leader (80%)
Gloria Posada, BS	Bilingual Secretary and Lawyer (50%)
Libardo Rivas, M.Sc.	Economist, Research Associate
Rubiano, Jorge, Ph.D.	Geographer (25%)
Douglas White, PhD.	Economist (50%)