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**A Compilation of Excerpts on Social Science Research from
TAC-Commissioned External Reviews of Centres and
Systemwide Programmes Since 1995**

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A Compilation of Excerpts on Social Science Research in the CGIAR from TAC-Commissioned External Reviews of Centres and Systemwide Programmes Since 1995¹

Summary

This is a compilation of excerpts on social science research in the CGIAR taken from the reports of the TAC-commissioned external reviews of Centres and Systemwide Programmes conducted since 1995. The information is organized into eight domains of research and research related activities along the Research-to-Development Continuum, from baseline ex-ante activities to technology generation and policy research to technology adoption research and information dissemination and ex-post assessments. Information on activities related to enhancing NARS capacity in social science and on TAC's and review panels' views on social science capacity in the CGIAR Centres is also included.

1. Introduction

At the behest of TAC (now CGIAR interim Science Council) in 2001, the CGIAR Centres agreed to hold, in September 2002, a Systemwide conference of social science researchers and other scientists to review the status and role of social research in the CGIAR. CIAT agreed to coordinate the organization of the conference.

The social conference proposal from TAC entitled “*The Role of Social Research in the CGIAR – Supporting the Strategy – Achieving Development Impact*” (SDR/TAC:IAR/01/25) makes two assertions:

- (i) the status and performance of social research in the CGIAR System is not where it should be despite the System's central interest in the poor as reflected in the new CGIAR vision and strategy which puts significant emphasis on the poor and how agricultural research can help cultural and organizational behaviour of CGIAR's ultimate clients; and
- (ii) social researchers in the System are below critical mass and need support. The general concept is to facilitate the internalization of the new social guidance contained in the new CGIAR vision and strategy.

To inform the conference deliberations on these two assertions, TAC Secretariat was requested by the conference organizing committee² to prepare a compilation of excerpts on social science research from the reports of the TAC-commissioned external reviews of Centres and Systemwide Programmes since 1995. In addition, the organizing

¹ Prepared by Amir Kassam, Saurav Barat and Elena Moreddu as a background information document for the CGIAR Social Research Conference, 10-12 September 2002, CIAT, Cali, Columbia. Helpful advice and encouragement from Michael Cernea are gratefully acknowledged.

² The committee comprises Joachim Voss, Jacqueline Ashby, Ruth Miensen-Dick, Michael Cernea, Amir Kassam and Andres Palau.

committee called for a survey of social science staff capacity in the CGIAR. The survey results are available on the conference website.

This document is a compilation of the information extracted from the following 16 TAC-commissioned external reviews reports of Centres: IITA (IITA 2001), IWMI (IWMI 2000), WARDA (WARDA 2000), ICARDA (ICARDA 2000), CIAT (CIAT 2000), ILRI (ILRI 1999), ICLARM (ICLARM 1999), CIFOR (CIFOR 1998), ICRAF (ICRAF 1998), IRRI (IRRI 1998), IFPRI (IFPRI 1998), CIMMYT (CIMMYT 1997), IPGRI (IPGRI 1997), ICRISAT (ICRISAT 1996), ISNAR (ISNAR 1996), CIP (CIP 1995); and three external review reports of Systemwide Programmes: Systemwide Livestock Programme (SLP 2001), Systemwide Programmes with an Ecoregional Approach (SPEA 1999) and Systemwide Genetic Resources Programme (SGRP 1998).

The information on social science research is drawn from the TAC commentaries and main body of the review panel reports. The material is grouped into eight domains, recognizing that research activities in all CGIAR Centres are located along a Research-to-Development continuum or cycle, from social science activities in: (i) baseline characterization and *ex-ante* studies; in research and research related activities in the five CGIAR output categories: (ii) germplasm conservation; (iii) germplasm improvement; (iv) sustainable production systems and natural resources management; (v) policy analysis and management; and (vi) enhancing national institutions; in (vii) output related activities of technology adoption and information dissemination; and in (viii) *ex-post* impact assessment on outcomes.

Thus, the information compiled in this document is organized in the following sections.

- Social science and farming system/household/production characterization, including diagnostic and *ex-ante* analysis of need and impact (CH) (Section 2)
- Social science and germplasm conservation (GC) (Section 3)
- Social science and germplasm improvement (GI) (Section 4)
- Social science and sustainable production systems and NRM (PS/NRM) (Section 5)
- Social science and policy analysis (PA) and management (M) (Section 6)
- Social science and enhancing national institutions (ENI) (Section 7)
- Social science and technology adoption (TA) and social science information dissemination (ID) (Section 8)
- Social science and *ex-post* impact assessment (EPIA) (Section 9)

Section 10 presents TAC's and review panels' views on social science capacity at the Centres (SSRC-C). The report ends with Section 11 in which some concluding remarks are offered.³

³ An overview of social science research in the CGIAR is presented in a separate paper (Kassam 2002). This paper analyses the information given in this compilation and in other TAC strategic documents, and highlights some of the important issues that need to be addressed in relation to the future of social science research in the CGIAR and role of social research within it.

2. Social Science and Farming Systems/Household/Production Characterization (CH)

2.1 CIAT (CIAT 2000)

CIAT's **Hillsides Project (PE-3)** has yielded a method for linking local and regional perceptions of well-being with georeferenced databases, integrating traditional with scientific knowledge. CIAT projects currently use two methods for creating an entry point into a community: **technology** and **social process**. The **Hillsides Project** uses a social process, **Participatory Planning by Objectives**, to draw out farmers' problems and, subsequently, narrowing its focus to research questions within CIAT's mandate areas.

One of the achievements of CIAT's **Hillsides Project (PE-3)** is an Agricultural Atlas of socioeconomic and biophysical data for Honduras from **PE-4, the Land Use Studies project/Atlas of Honduras**. The Atlas a *Data set for Latin America: Atlas of Honduras*, gives biophysical and socioeconomic characteristics at municipality and community levels before and after Hurricane Mitch.

A second achievement of **PE-3** is *Methodology Development*: Improved measures of poverty for spatial analysis developed for and in joint production with **PE-4**, for instance the **well-being index**, combining GIS with data from participatory research.

The objective of CIAT's project **Environmental Sustainability and Land Use Dynamics in Latin America (PE-4)** is to improve policy and decision making for sustainable land and environmental management in Latin America through the scientific analysis of environmental patterns and policy indicators. Project outputs, at a regional level, include: identification of spatial distribution of land use patterns and associated environmental opportunities and constraints; their correlation with socioeconomic data; and the development of socioeconomic indicators.

CIAT's **Agroenterprises (SN-1) project** identifies agroenterprise opportunities with **market potential** for **small farmer communities**, using an area-based, rather than a single commodity approach. The project identifies options to improve **women's roles and family incomes** in: fragile hillsides, tropical lowland ecosystems, and the Colombian *llanos* in the savannah ecoregion.

2.2 CIFOR (CIFOR 1998)

Among **CIFOR**'s four main strategic objectives as listed in its MTP and Strategic Plan, is understanding the biophysical and socioeconomic environments of present and potential forest systems, and their functional relationships (overcoming the basic knowledge constraint to both technology and policy advancements).

2.3 ICARDA (ICARDA 2000)

Prioritizing the development of draft typologies of CWANA farming systems and adoption profiles of farmers could serve as a basis for anticipating the technological and socioeconomic impact of ICARDA research (*ex-ante* needs assessment).

2.4 ICLARM (ICLARM 1999)

ICLARM, through the **International Network on Genetics in Aquaculture (INGA)**, is engaged in documenting indigenous knowledge concerning tilapia genetic resources in West Africa. With ICLARM's facilitation, INGA members have formed multi-disciplinary research teams of biologists and social scientists, and initiated regional projects in Asia-Pacific and Africa.

2.5 ICRISAT (ICRISAT 1996)

ICRISAT, as per its Strategy, was one of the first IARCs to recognize women's important role in agricultural production in the SAT's, and accordingly mould its research programme around gender. It has, to some extent, succeeded in improving scientists' capacity to use gender analysis information. Strategies to incorporate a gender perspective in its programme have been: using female illiteracy to calculate the equity index, used in turn to prioritize research themes; setting up a multidisciplinary Gender Analysis Committee; organising Women Farmers' Days in India and requesting the CGIAR Gender Programme to assess projects from the "gender implications" perspective. In May 1996, the SEPD organized a "gender research methodologies" workshop, in pursuit of an ICRISAT gender research strategy.

Based on the findings of an On-Farm Research (OFR) sector review, ICRISAT formulated a tentative action plan. OFR activities, in ICRISAT, date back to the 1970s, figuring in 19 of its 21 active projects during 1995-97. The majority of OFR activities concerned socioeconomic studies along with pest management and soil/water management, the rest being varietal trials and diagnostic surveys. More than 60% of the trials were farmer managed, but less than 2 % were farmer experimental (farmer determining all experimental treatments). OFR activities have also enlisted the participation of NARS, extension services, and NGOs. As a discipline, economics was relatively less involved with OFR.

2.6 IITA (IITA 2001)

IITA's agroecosystem characterization studies, complementing soil sampling and Rapid Vegetation Appraisal, considered the interaction between the technical (i.e. biophysical) and socioeconomic variables. By selecting out a number of villages for intensive monitoring and on-farm technology testing, a firm foundation was laid for determining and targeting relevant technologies within the **Moist Savanna and Humid Forest agroecosystems**. The objective of this characterization research was to go beyond a descriptive, site-specific traditional farming systems approach to a more dynamic one that combined **geo-referencing with socioeconomic surveys**. The approach resulted in the delineation of representative areas (the **benchmark areas**) to serve as a basis for extrapolating research findings. A major hypothesis of the characterization work is that the stage at which a farming system operates determines the type of technology that can be introduced. Farming Systems are characterized primarily as either **population-driven** or **market-driven** and whether in a **land-expansion (low land-use intensity)** or **land-intensification (high land-use intensity)** phase. This two by two matrix gives four types of systems. Systems dynamics is determined by two factors: the existence of a major cash crop and access to wholesale markets. The role of cash cropping and market infrastructure is strong in a market-driven system and weak in a population-driven one. An offshoot of this work has been an analysis of the impressive success of introducing maize into the

Moist Savanna Zone. What emerged from the studies was a definition of research domains, but these were a more appropriate tool for biological processes, failing to capture human and social factors. In lacking a clear analytical framework, the Panel had reservations about the utility of IITA's characterization scheme to its future research prioritization.

In the humid and subhumid regions of West and Central Africa, IITA's socioeconomic work has helped **characterize environments and technologies**. This exercise has contributed to the "**benchmark area**" concept, a major focus of IITA's current field operations under its **ecoregional mandate**.

2.8 *IRRI (IRRI 1998)*

IRRI's Social Science Division (SSD) aims to, among others, understand farmers' indigenous knowledge. SSD focuses on understanding socioeconomic characteristics of different agroecosystems including farmers' current practices, with a view to research prioritization and identification of technologies. IRRI's SSD scientists, in collaboration with the Rockefeller Foundation and Yale University, have developed a methodology for *ex-ante* needs assessment and research priority-setting: the implications of identified technologies for rural household economy/welfare (equity in distribution of gains, gender, participation of various groups in decision-making) as well as for types of ecosystem (irrigated, rainfed lowland, upland, and flood-prone). The perceptions of knowledgeable rice farmers, extension workers, NARS social scientists concerning yield gaps, yield losses and associated constraints, are obtained through **Rapid Rural Appraisal** and analyzed. The methodology has been refined, and involves the following steps: (i) specification of the project in terms of objectives, techniques, inputs, costs, and time; (ii) estimation of the project benefit stream over its life span, (iii) use *ex-post* evidence of research impact in terms of actual benefits and costs together with subjective probability estimates of likely benefits and costs; (iv) using modifiers to revise the estimates; and (v) discounting the annual streams of benefits and costs by using an appropriate discount rate. However, the shortcoming of this methodology is: past *ex-post* experience cannot enable estimating the full range of benefits and costs, since technologies evolve over time, leading to qualitatively different outcomes.

One of IRRI's priority research areas is: to develop methodologies (GIS) for delineating homogeneous regions on the basis of both biophysical and socioeconomic factors and develop income improvement/farming commercialization strategies, addressing location-specific problems.

On **gender**, the IRRI project "**Projections and Policy Implications for Medium- and Long-Term Rice Supply and Demand**" aims to document the involvement of men, women, and children in economic activities and their contribution to household income as well as their role in household decision-making. IRRI will, in future, evaluate the impact of migration of men on women's management of farms and input use efficiency.

2.9 *WARDA (WARDA 2000)*

WARDA established a Farm Management and Household Survey (FMHS) database, laying the foundation for micro-economic analysis of farmer behaviour in the main ecologies and rice farming systems. The farm-level results of the FMHS have yet to be extrapolated and validated to larger agro-ecological zones.

2.10 SLP (SLP 2001)

The SLP portfolio of projects is in the process of defining and refining the contribution of the following to farming systems under a wide range of environmental and socioeconomic conditions: cereal and legume grain residues, fodder trees and shrubs, and forage. Preliminary evidence points to SLP projects increasing the knowledge base on smallholder crop-livestock systems (or at least quickening the pace of knowledge generation): not only general knowledge relating to the different “niche” products of the plant-based Centres, but also the interactions of these with biophysical and economic components of systems and associated environmental impacts. Documentation of impacts on labour, poverty and other socioeconomic criteria through definitive data and subsequent analysis still have to await the SLP’s implementation for several more years.

3. Social Science and Germplasm Conservation (GC)

3.1 IPGRI (IPGRI 1997)

While underlining the importance of Genetic Resources Science & Technology, the Panel noted a constant need for close integration of such research with the other thematic activities bearing down on people’s needs and practices, particularly **social science** including **farmers’ knowledge on PGR**. IPGRI is using farmers' knowledge in locating and collecting crop plant diversity, and several partners with expertise in this area have been mobilized globally and within partner countries.

IPGRI’s Asia, Pacific & Oceania (APO) Group is participating in maintaining and documenting local PGR knowledge. The Panel hailed the APO Group’s establishment of linkages with the regional NGOs strong in PGR, with farmers' groups and other units of the non-formal sector. Being critical to capitalizing on traditional knowledge on PGR, the Panel called for a strengthening of such collaboration, particularly with regard to *in situ* conservation.

Institutional plant breeding primarily deals with major food crops, the adoption of improved varieties often being restricted to the more favourable environments. Plant breeders seldom produce varieties that are adapted to the more marginal, stress-prone environments. Thus, the value of locally adapted landraces and on-farm decentralized crop improvement was recognized. IPGRI’s **In situ Conservation** project builds on the realization that farmers continue to play a major role in the conservation of agrobiodiversity. Keeping track of the link between *in situ* research and actual farmer situations, the Centre is encouraged to continue long-term research on: location and distribution of specific characters; and genotype x environment interaction of landraces.

From the early 1990s, IPGRI has expanded its partnerships to include private sector and NGOs that share its biodiversity conservation and use concerns. Links with farmer organizations and local NGOs working with farmers were established specifically concerning *in situ* conservation, participatory farmer breeding and forest genetic resources. Recognizing the lack of knowledge of on-farm management of genetic diversity as a major bottleneck to genetic conservation, IPGRI formulated a project encompassing 9 countries. Working through national programmes, the project focuses on linking farmer decision-

making to measurable indices of on-farm genetic diversity. In agreeing with this approach, the Panel noted the working relationships established between IPGRI, national programmes and NGOs. IPGRI's EPMR Panel prioritized the inventorying and surveying of the presently available genetic diversity, involving local institutions and universities, so as to: **highlight from below** genetic loss and conservation opportunities to enable a more convincing case for conservation to policy-makers and research managers; and provide valuable economic data.

The research agenda under IPGRI's Strategic Plan, developed between 1990 and 1992, was expanded. The thematic activity **Genetic Resources Science and Technology** underwent organizational change so as to provide a closer link between **conservation, sampling of genetic diversity and utilization**: the Panel noted the creation of three new major programme areas, namely *in situ* conservation, forest genetic resources, and integration of ethnobotanical and socioeconomic perspectives into *in situ* maintenance of genetic diversity.

In the context of COGENT, the IPGRI Panel proposed a study of socioeconomic factors behind farmers' reluctance to replant coconuts, possibly using Philippines as an example, and identify ways to enhance the market appeal of coconuts and its products.

Following on from the Leipzig Conference, gender and traditional resource rights of farmers emerged as prominent issues for IPGRI. Modest activities on traditional resource rights and access of local people are being undertaken **in partnership with local community representatives**.

3.2 *SGRP (SGRP 1998)*

CIP has teamed up with the Wageningen Agricultural University (WAU) in the collaborative network **Users' Perspective with Agricultural Research and Development (UPWARD)**, which incorporates gender analysis from a user/use perspective. Many of the UPWARD projects deal with biodiversity conservation and use.

4. **Social Science and Germplasm Improvement (GI)**

4.1 *CIAT (CIAT 2000)*

Concerning **Participatory Research (SN-3)**, CIAT has been a leader in developing Participatory Plant Breeding (PPB), a method for plant breeders to create collegial relations with farmers in the course of undertaking research. Participatory Research Methods (PRM), now institutionalized, dates back to the 1980s, with participatory evaluation of advanced lines by farmers and other users. PPB was further developed in the **African Bean programme** and the **Systemwide Programme on Participatory Research and Gender Analysis**. Some NARS breeders in East Africa now considered PPB to have shortened the time to the release of a new variety and enabled tailoring of varieties to heterogeneous local conditions and local preferences.

Following the Kellogg Foundation's funding of a special project called **Investigación Participativa con Agricultores (IPRA)** or **Farmer Participatory Research**, attention shifted beyond individual farmer-researcher contacts to developing a

long-term community level capacity for technology evaluation and adaptive research, for instance creating Farmer Research Committees (CIALs). A lesson learned was inattention to the gender division of knowledge, responsibility, labour, property, technology and power can adversely affect research. CIALs are also an achievement of the **Pest and Disease Management** (PE-1) project, building on the earlier **Cassava IPM** Project.

PPB is an integral part of CIAT's project **Beans in Africa (IP-2)**. As for Institutionalizing Participatory Research Methods, farmers in Uganda and western Kenya, under this project, have, on their own initiative, begun to disseminate PPB and train other farmers to produce seed, while some NARS have incorporated PPB into their breeding programme. Participation of local communities has been extended to scientific reports. CIAT scientists and their partners have been very effective in working with women farmers, which should be continued. Concerning the up-scaling of management innovations, research findings demonstrate that understanding how farmers learn about management calls for employing a combination of methods and not just group interviews. This project could serve as a model for other CIAT participatory initiatives.

4.2 *CIMMYT (CIMMYT 1997)*

CIMMYT's Economics Programme (EP) has assisted the commodity programmes in demand forecasting, technology assessment and priority setting (*ex-ante* needs assessment). Following funding cutbacks, EP's On-Farm Research (OFR) work was considerably reduced, save for economists at outreach locations in Africa and Central America. Several NARS were deemed competent in this area. The EP is currently contributing to new Systemwide initiatives, including the one on **participatory research and gender analysis**. It continues to engage in social and economic research pertaining to the Natural Resources Group (NRG).

Having worked in CIMMYT's outreach programmes and with the regional programmes, the EP group is attuned to developing country field conditions. The EP has had a long history of supporting the commodity programmes in technology design. This meaningful collaboration is manifested in the project **Economics of Genetic Diversity**, examining the relationship between biodiversity and productivity. The same holds true as regards **Economics of biotechnology**.

The CCERs provided guidance to the EP's agenda-setting, as part of CIMMYT's MTP, the main themes approved by the EPMR Panel. With the aim of channelling efforts toward poverty alleviation in less favoured environments, CIMMYT's MTP represents a shift toward strengthened linkages with the Natural Resources Group (NRG) and the Economics Programme. Unlike global projects, regional projects of the **Maize Programme** focus on the interactions between germplasm management, natural resource conservation, and socioeconomic issues. In step with the opening up of national economies and their agricultural sectors to international competition, a whole range of new policy issues connected with "stability" assume importance within EP's research agenda.

4.3 *ICARDA (ICARDA 2000)*

ICARDA, since its inception, has had close interaction with farmers thanks to its social science staff applying conventional formal and informal survey techniques. Of special note are:

participatory barley breeding; and the community-level initiative to broaden stakeholder interactions with scientists.

4.4 WARDA (WARDA 2000)

WARDA's use of indigenous knowledge and social exchange networks as part of the Community-Based Seed Systems (CBSS) to accelerate research impact on rainfed and irrigated rice is noteworthy. With the **CBSS**, the time required from release of a variety to production of sufficient seed for distribution to a large number of farmers, usually six to seven years, is shortened to no more than four years. WARDA was commended by the EPMR Panel for adoption of participatory approaches in all its research programmes: it has promoted improved and new rice technologies through **Participatory Varietal Selection (PVS)** and **Community Based Seed Production System (CBSS)**. Many of WARDA's NERICA varieties have shown large productivity gains over local varieties in widespread farmer controlled evaluations. The **PVS approach** involves the NARS and farmers in the breeding programme early on thus allowing for accelerated spread of the new varieties. Having spread to 17 countries in the region, a solid PVS network has been established. The PVS has covered 64 sites, involving over 3000 farmers. TAC was informed by the Centre that women are involved in participatory variety selection, and exploiting the interspecifics was targeted toward women (and children), in particular regarding reduction of weeding time. However, TAC highlighted the importance of gender disaggregated analysis.

SGRP (SGRP 1998)

However, several CGIAR Centres have been executing gender projects, in partnership with national institutions, for instance CIAT is currently coordinating the **Systemwide Programme on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation**.

5. Social Science and Sustainable Production Systems and INRM (PS/NRM)

5.1 CIAT (CIAT 2000)

To specifically address multi-stakeholder management of natural resources, CIAT had formulated the **Hillsides Project (PE-3) Community Management of Watershed Resources**, covering Colombia, Honduras and Nicaragua. In 1992, it was led by a **rural sociologist** at headquarters, research activities being focused on soil management, cropping systems, **farmer participatory research**, and decision support systems. In the area of watershed management, CIAT is credited with the **SOL Concept**, the Spanish acronym for “supermarket of technologies for hillsides”: a network of actors and activities taking place at various sites within a reference site. The concept aims to: maximize interaction between scientists and end users; and apply empirical data from strategic research as an input to the Decision Support System (DSS).

CIAT's **Smallholder Systems Project (Sustainable Systems for Smallholders: Integrating Improved Germplasm and Resource Management for Enhanced Crop and Livestock Production Systems) (PE-5)**, established in 1997, has the mandate of evaluating and integrating factors affecting rural production systems such as soils, agro-industry, and socioeconomic structures/processes (strategic research results) within production systems.

Through Participatory Research Methods (PRM), the project has developed generic agricultural technologies for sustainable production, for instance cassava conservation strategies. It has introduced a **whole-farm approach** to the commodity research agenda, and will develop a model for community-based natural resource management in Southeast Asia.

5.2 *ICARDA (ICARDA 2000)*

Under **ICARDA's Socioeconomics of Agricultural Production Systems Project**, farmer's indigenous knowledge is being documented and analyzed through participatory barley breeding (mobilizing farmers as major actors in the selection, testing, and multiplication of new cultivars). The potential payoff from such activities is estimated. The user perspective, including indigenous knowledge of ecological processes and resource management, is incorporated in NRMR in Egypt, Syria, and Yemen, and the same is planned for research sites in Central Asia and the Caucasus.

Achievements of ICARDA's **Land Management and Soil Conservation Project** during 1993 – 1999 were: farmer-participatory trials at four sites in degraded steep land in Northern Syria; farmer-testing of simple soil fertility-enhancing techniques; and design of participatory land valuation approach to understand farmer's land management decision-making. The Panel called for a strengthening of the project's socioeconomic component.

To enhance co-operation in NRMR at ICARDA, a Water Interest Group, an Integrated Feed Livestock Group, and a Socioeconomics Interest Group have been formed. The long-term objective of the NRM Programme is to establish digital databases of spatial and temporal information on climate, land resources, crops and genetic characteristics, linking up with socioeconomic databases.

5.3 *ICLARM (ICLARM 1999)*

A main thrust of ICLARM's **Aquatic Environments Program (AEP)**, one of its nine programmes, is to identify **social** parameters influencing coral reef management.

5.4 *ICRAF (ICRAF 1998)*

The R-to-D continuum encompasses: research design, research implementation, translation of research results into ideas and technologies for development, dissemination, adaptation and adoption. ICRAF is evolving into an institution that gives explicit and equal emphasis to research and to the development activities needed to apply research results on farmers' fields. In operationalizing the R-to-D Continuum, ICRAF has established the Development Division, making it an equal and complementary programmatic unit and not merely a "service" unit for the Research Division. It has also developed long-term farm-scale ecological-economic simulation models for assessing adoption potential (*ex-ante* impact assessment) and sustainability of existing and improved soil management practices. A farm-scale case study was completed in eastern Africa.

ICRAF's **Global Programme on Natural Resources Strategy and Policy**, seeks to, among others, determine priority species for domestication by: participatory assessment of farmer needs, species used and economic valuation of species.

5.5 *ILRI (ILRI 1999)*

Under ILRI's **Sustainable Production Systems Programme**, key bioeconomic themes include increasing net economic returns with adaptable technologies that alleviate constraints, and improve market opportunity. The Panel commended the recognition of important biological and economic interactions for specific technologies under variable management environments.

5.6 *SPEA (SPEA 1999)*

For any Systemwide Programme, it would be worthwhile to evaluate, using certain criteria, how the value added from making the activities "Systemwide", rather than leaving them as individual Centre-based initiatives, outweighed the additional transaction and management costs. However, it is hard to find objective indicators for value added. One possible indicator could be the extent of use of participatory methods by farmers and all potential beneficiaries/stakeholders to define research problems and identify opportunities/priorities (*ex-ante* needs assessment). The Review Panel found good evidence that participation-enhancing tools and mechanisms have been used in most cases. Relevant examples include **Local Agricultural Research Committees (CIALS)** at CIAT, and the active participation of district stakeholders in the African Highlands Initiative (AHI) in eastern Africa. However, strong cultural barriers sometimes impede the involvement of particular segments of society in decision making.

There has, as yet, been no example where the "whole sequential approach" has been systematically followed, that is, an NRM problem critical to the sustainability of developing-country agriculture in a priority ecoregion, has been defined, analyzed in terms of all its researchable problems/opportunities in both the technical (biophysical) and human domains, and which has led to the design of significant new research (*ex-ante* needs assessment). Probably, the **Alternatives to Slash and Burn (ASB)** and CIAT's programmes, during their formative stages, came closer to this ideal than some of the more recent ones.

6. **Social Science and Policy Analysis (PA) and Management (M)**

6.1 *CIMMYT (CIMMYT 1997)*

Considering research as a "public good" justifies a major role for the state or state-supported institutions. However, a whole range of activities falling under the "social science" realm and influencing the research-adoption-impact chain, from extension to input supply and marketing, are legitimate areas of operation for the private sector. CIMMYT's EP has engaged in a privatization study on maize seeds. Investigation into the potentialities and constraints of smaller, national companies in a few selected countries, in terms of macro-economic policy relating to maize & wheat viz. **price and trade policy** should, according to the Panel, figure in the research agenda.

6.2 *CIFOR (CIFOR 1998)*

CIFOR's Project 10 **Policies, Technologies and Global Changes** synthesizes the Centre's collective understanding of, among others, socioeconomic and demographic transitions that shape demands on the forest.

6.3 *ICLARM (ICLARM 1999)*

ICLARM is **increasingly emphasizing** devolution of fisheries **management** from central government **to** local authorities or even the **fishers themselves** through co-management: the very **future of fisheries** depends on enabling communities to **participate fully in decision making** on fisheries management.

ICLARM is conducting relevant **policy research**, including environmental economics of key resource systems, toward improving **people-centered** policies for sustainable development.

6.4 **ICRAF (ICRAF 1998)**

In collaboration with CIFOR, ANU and FINNIDA, ICRAF performed an economic assessment of policy distortions, revealing that direct policy intervention to promote tree planting on grasslands by smallholders in Southeast Asia could not be justified, even after including carbon sequestration benefits.

ICRAF's **Regional Programme** aims at developing economic-ecological models to address policies concerning soil fertility replenishment. The EPMP Panel considered the **Sub-humid Highlands of Eastern and Central Africa (ECA)** to be appropriate for comparative analysis of policies, for instance fertilizer subsidy policy vis-à-vis improved fallows. Specifically concerning the **Semi-Arid Lowlands of West Africa (SALWA)** Regional Programme, the Panel perceived the need for additional policy research covering, among others, **irrigation development** and **area development** to complement on-going technology development work, bringing out its socioeconomic and research implications.

6.5 **ICRISAT (ICRISAT 1996)**

ICRISAT's **Markets and Policy** project is sub-divided into three sub-projects: *Commodity Situation and Outlook*; *Product Markets and Policy*; and, *Input Markets and Policy* (seed, fertilizers, agro-chemicals). Its objectives are to assess supply and demand for the ICRISAT mandated crops, and to identify policy and marketing constraints to adoption of improved technologies concerning these. There is an inter-disciplinary mix as well as collaboration with IFPRI, FAO, ODI, NRI, and Stanford and Rutgers Universities along with a number of NARS and NGOs in Asia and Africa.

The *Commodity Situation and Outlook* subproject comprises two activities: ecoregional papers for the IFPRI 2020 Vision initiatives, and a major publication to be produced in conjunction with FAO, *The World Sorghum and Millet Economies: Facts, Trends and Outlook*. This sub-project enables identifying technological, policy and institutional interventions required to ensure continued supply and demand for sorghum and millet, particularly in the drier parts of the SAT. The Panel suggested collaboration with IFPRI to arrive at comparable data sets across commodities.

The *Product Markets and Policy* sub-project activities pertain to, among others: changes in cropping patterns through development of rainfed agriculture, analysis of changes in dryland agriculture in SAT India from 1970-90, identification of major competing crops (for instance sorghum's competitiveness over time), and analyzing policy, economic and social factors impeding sorghum utilization in India.

Meanwhile, the *Input Markets and Policy* sub-project covers: seed policy and the evolving seed market; seed production and distribution for sorghum and millet; and constraints to seed release in SEA. Some recommendations were formulated to improve the efficiency of the seed sector in SADC countries. At IAC, a collaborative study with Rutgers is assessing the impact of recent seed policy reforms in India, through a survey of nearly 160 seed companies. In the area of seed multiplication and distribution, formal (for instance drought relief programmes), commercial, and informal (farmer-to-farmer barter) seed supply channels have been comparatively analyzed in Zimbabwe, and efficiency-enhancing opportunities identified in respect of the same. ISC has initiated similar investigations for the WCA, where better research targeting has removed constraints concerning support staff and funding. As for other inputs, fertilizers and agrochemicals, a consultant has produced a draft report on SEA, covering, among others, water markets and strategies for managing groundwater irrigation. A study of institutional alternatives for the latter is planned.

6.6 *IFPRI (IFPRI 1998)*

Between 1992 and 1997, IFPRI's **Environment and Production Technology Division's (EPTD)** research agenda comprised: providing expertise on social science policy research toward an increase in sustainable food production for the poor; and identifying incentives for natural resources management at the household and community levels. EPTD outputs are: bio-economic modelling techniques for analyzing the economic and environmental consequences of alternative development pathways at the community level; and methods for combining GIS data with economic models for *ex-post* and *ex-ante* evaluation of agricultural research.

Although IFPRI's **Food Consumption & Nutrition Division (FCND)** draws on a variety of disciplines, the number of non-economists remains limited. Given that inadequate survey design for determining statistical differences between groups has led to misguided conclusions on the impact of policies on nutrition, non-economists played an essential role in distinguishing between impact and process (intermediary outcomes).

The thrust of IFPRI's **Markets and Structural Studies Division (MSSD)** is to identify market failures and design institutions likely to avoid them. Aside from enabling the smooth and efficient functioning of markets, the MSSD safeguards against the poor losing out in the general interest. It has been concluded that: market reforms in Africa have been less than successful due to inadequate attention to finance and infrastructure; and market reform can promote over-exploitation/exhaustion of soils, particularly in regions such as the Sahel. Diversification creates economies of scale.

The Panel lauded and highlighted IFPRI's identification of its niche through the **Trade and Macroeconomics Division (TMD)** in terms of analyzing the role of agriculture in an economy-wide context.

6.7 *ILRI (ILRI 1999)*

ILRI's **Project 12 Policy Analysis** provided valuable results of research on: improving soil, water and nutrient management, with a view to increasing competitiveness; and institutional reform for efficient delivery of animal health services. In the context of the prevailing policy framework, the Project has blended technological and economic coefficients. The quantitative models to capture behaviour include, among others, simulation models and a Policy Analysis

Matrix. Partnership with national organizations responsible for policy has been particularly valuable.

6.8 *IRRI (IRRI 1998)*

The main objective of IRRI's **Social Sciences** research programme is to collect information on socioeconomic indicators and on characteristics of rice ecosystems with a view to the planning and prioritization of research. This interdisciplinary research, based on coordination with various scientific and social science departments, entails: monitoring production/yield and consumption patterns as well as demand and supply balances for major rice-growing economies as related to changes in socioeconomic condition, this information maintained in the form of a socioeconomic database; assessing the implications of rice output/yield for policy formulation and of macro-economic policies (influencing trade liberalization, input use, and pricing) for rice research; tracking the linkage between rice productivity growth and expansion of the rural non-farm sector. Concerning implications of rice output for policy formulation, IRRI has completed, and published the results of, a project **Projections and Policy Implications for Medium- and Long-Term Rice Supply and Demand**, in collaboration with IFPRI and National Policy Research Institutes in seven major countries.

6.9 *ISNAR (ISNAR 1996)*

Under the sub-theme of **Linking research with national policies**, as part of ISNAR's Research **Policy and System Development Programme**, are 11 research projects, the most important one being on *structural adjustment*. Examining six "early adjusting" countries, namely Burkina Faso, Chile, Ghana, Indonesia, Mexico, and Sri Lanka, this study revealed that structural adjustment did not automatically lead to cuts in research spending, but there was a push for greater accountability of the research system and its efficacy as a development tool.

The most recent addition to this ISNAR programme has been the **New Challenges** sub-theme. Outputs include, among others, *Agro-industries and market orientation*, with only one project. It aims to capture the broadening research agenda as influenced by developments in agri-processing industries and by national and international market conditions.

6.10 *IWMI (IWMI 2000)*

IWMI has established four complementary research programmes: (1) Irrigation and Water Resources; (2) Policy, Institutions and Management (PIM); (3) Health and Environment; (4) Applied Information and Modelling Systems. Social science research is located in the PIM programme, IWMI's largest research programme. IWMI's Medium Term Plan, 2000-2002, identifies three projects under the **Policy, Institutions and Management Programme (PIM)**, the most relevant being: MTP Project #8 - *Promoting Effective Institutions for Managing Irrigation and Basin Water Resources Systems*; and MTP Project #9 - *Linking Gender, Poverty and Water*. The current activities of the Programme include: diverse studies of the transfer of irrigation Operation & Maintenance responsibility from government agencies to local water user groups; a major undertaking on gender and poverty aspects of water management; and the complex set of institutions involved with water resources management at the basin level.

In seeking to identify the policy tools, organizational designs and institutional frameworks necessary for sustainable increase in water productivity and improved people's lives, PIM links up its core staff with other IWMI staff, and in partnership with social scientists

and others in government agencies, universities and NGOs conducting strategic and applied research. PIM has made significant achievements in the area of organizational design for irrigation systems. Experience in **Irrigation Management Transfer (IMT)** under various national settings has proven very valuable to policymakers and irrigation department staff for planning and implementing new policies. IWMI's **Philippines** programme had focused on enhancing the sustainability of **Water Users' Associations (WUAs)** through self-assessment methodologies. In **Nigeria**, IWMI has assisted in the creation of WUAs for better irrigation management.

IMT is bringing to the fore new issues, among others, water rights and equitable access, the private sector's capacity to manage water resources, the adequacy of maintenance, water pricing, the role of law, government reform. In recent years, economic policy instruments such as water pricing have received inadequate attention. From its inception, IWMI's range of studies focusing on valuing water in irrigated agriculture considered whether water was a private good that can reasonably be left to free market forces or a public good that requires some amount of extra-market management to efficiently serve social objectives. This important distinction has been overlooked by policymakers in many countries. IWMI's studies have pointed to a "necessary and sufficient set of preconditions for market mechanisms to allocate water", as part of irrigation management transfer, from defining entitlements of all users under all levels of water availability to policy and legal provisions obligating users to pay water fees.

IWMI has also contributed to the debate on cost sharing for water services in irrigated agriculture through a series of studies undertaken in Egypt in 1995. These studies, using IFPRI's model of the Egyptian agricultural sector, examined alternative approaches to cost recovery. Their results showed the economic advantages of having crop-based charges both from a farmer and national perspective (by reducing demand for water while increasing returns to water). The studies conclude that the present irrigation water distribution and cost-sharing system in Egypt provides farmers with the water they need—unmeasured and undifferentiated at the farm level. In collaboration with IFPRI, IWMI has designed indicators which address agricultural performance and socioeconomic effects: indicators taken from other fields, for instance the politico-economic system, have been adapted to the subject of irrigation water management in developing countries, in the form of a nested hierarchy.

6.11 WARDA (WARDA 2000)

WARDA initiated its own policy work on the economic competitiveness of rice production systems in West Africa. WARDA's **Programme on Policy Support** has conducted 4 **rice sector studies** including a detailed analysis of competitiveness of local rice production by main commodity sub-system. These **confirmed the influence of production site (distance from coast) and level of input use, and underlined the positive impact of small-scale processing technologies on the overall competitiveness of African rice economy**. Although emphasis has been on the efficiency and costs of local rice production and on the policy environment, rice marketing performance of locally produced rice as compared to imported rice requires greater attention. The same applies to **seed sector development** for rapid dissemination of new seed technologies, particularly following the demise of parastatals responsible for seed multiplication and distribution.

One of the two research consortia where WARDA assumes a scientific leadership role is the **Human Health Consortium (HHC)**. The HHC membership comprises two national agricultural and health institutions (Mali and Côte d'Ivoire), IDRC, WHO Panel of Experts on

Environmental Management for Vector Control (WHO-PEEM). This formal network of specialist institutes and NARS partners was created to answer the question whether irrigation schemes for rice crops stimulate the incidence of malaria and/or of schistosomiasis. Research results point to minimal negative impacts on human health from intensification of lowland rice farming. The agriculture-health linkages project is of a high scientific quality, as testified by the partners and scientists involved, and by the calibre of the first scientific presentations at national, regional and international meetings. However, scientific findings have yet to be fully analyzed and published. The **Consortium** is developing an interactive graphical PC-based simulation model, as a decision support system, which integrates the agricultural, environmental and socio-anthropological determinants of malaria and schistosomiasis. This tool will assist governments in the formulation and application of inter-sectoral policies that promote rice ecosystem management for vector-borne disease control.

6.12 SPEA (SPEA 1999)

In orienting its research toward the key elements of the eco-regional approach, CIFOR emphasizes the role of **policy climate** and public management options in determining the future of tropical forests. A strengthening of policy research was necessary, by creating partnerships, to: analyze the influence of macro-economic and sectoral policies on resource management decisions; and design appropriate financial incentives, public investment allocations and targeted developmental programmes so as to enhance resource management.

7. Social Science and Enhancing National Institutions (ENI)

7.1 CIAT (CIAT 2000)

CIAT-NARS relations hitherto have been shaped by CIAT's significant shift toward NRM research, covering less-favoured agricultural areas, poor small farmers, participatory research methodologies, and **rural agro-enterprise development**. The panel noted that the effectiveness of CIAT's demand-driven **SOL** approach (a network of actors and activities taking place at various sites within a reference site) to enable resource poor farmers clearly articulate their technology needs depends on substantial research capacity within NARS or NGOs. The Panel was convinced by the assessment of CIAT's **Beans in Africa (IP-2)** project of the need for additional funds for professional education in, among others, social science, for local staff.

7.2 CIMMYT (CIMMYT 1997)

CIMMYT's EP staff in the Africa and Central America outreach programmes, in collaboration with the commodity programmes and NARS, organize short-term training workshops around the themes of, among others, natural resource policy, seed production and supply policy, and economic analysis. The EP's current research support to NARS is planned under a global project **Building Partnership through Human Resource Development**, and two regional projects **Improving Food Security in Sub-Saharan Africa** and **Enhancing Maize and Wheat Production Systems**, all of them at a preparatory stage. Significant contributions from EP staff are also expected for the proposed training course on sustainable systems. However, no such training programme is presently conducted in Asia. It was suggested that EP formulate a clearer Human Resource capacity-strengthening strategy for NARS. TAC urged CIMMYT to devote special attention to providing specialist training to meet NARS' growing needs in areas such as economic analysis of research, impact assessment methodologies.

7.3 *ICLARM (ICLARM 1999)*

The **common property rights/management** issues faced by **fisherfolk** have many parallels to those faced by land-based farmers. Under partnership research projects with individual CGIAR Centres (for example IFPRI in policy research), ICLARM contributes its experience and insights on **co-management** and **community institutions**. ICLARM has expanded links with partners in many developed and developing countries toward strengthening the capacity of national programs to support sustainable development. The same applies to partnerships with farming and fishing communities themselves, devolving to them greater resource management responsibilities, for example a **co-management system**. Two programs, **Integrated Aquaculture-Agriculture Systems Program (IAASP)** and **Coastal Aquaculture and Stock Enhancement Program (CASEP)**, work with poorer farmers and fishermen to provide them a greater range of **options for income and diet**. CASEP has had a direct influence on island communities in the Pacific that are particularly dependent on the marine environment for their survival.

In the field of social science, ICLARM also established the **Asian Fisheries Social Science Research Network (AFSSRN)** to enhance social science research capacity, pertaining to aquatic resources management. It comprises 14 member institutions from five countries.

7.4 *ICRAF (ICRAF 1998)*

ICRAF has been engaged in national-level capacity building by shifting NARS activities from largely on-station research to the broader and more integrative NRM approach on farm, heavily emphasizing social science input.

7.5 *ICRISAT (ICRISAT 1996)*

Under **ICRISAT's Product Markets and Policy** sub-project of its **Markets and Policy** project, expertise available within the Indian Council of Agricultural Research (ICAR) system could be transferred in the form of contract research and visiting scientists, to Africa where NARS are the weakest. ICRISAT's IRS economists should potentially play the catalytic and peer roles in improving latent socioeconomic expertise within NARS of the SAT to facilitate adoption of the Centre's technologies.

7.6 *IPGRI (IPGRI 1997)*

In response to increased importance of gender following the Leipzig Conference, IPGRI has recently prioritized the building of a network of expertise on gender-sensitive approaches relevant to *in situ* conservation.

7.7 *IRRI (IRRI 1998)*

One of the objectives of IRRI's **Social Sciences** research programme is to strengthen NARS to carry out socioeconomic research studies either independently or in collaboration with the Centre.

7.8 *ISNAR (ISNAR 1996)*

ISNAR's **Management Programme**, one of the Centre's two major programmes, is organized around the following three themes: **Managing research programs**; **Managing resources for research**; and **Managing research organizations**. Under the theme **Managing resources for research**, activities, both completed and on-going, are spread across six projects, including, among others: human resource development for ASARECA, in Guinea, and gender-related issues (4 projects).

7.9 IWMI (IWMI 2000)

The capacity-building activities of IWMI's PIM Programme are an important by-product of its research programme. Capacity-building for the organization as a whole, is also an outcome of IWMI staff's collaboration with NARS and other research partners. Particularly significant has been the support for graduate students, both local and international, to conduct research in collaboration with IWMI staff and research partners. This support has been especially important in the Mexico programme, and is projected to be so in South Africa. IWMI also has hosted advanced graduate students at headquarters. However, the skills needed to conduct planned strategic social science research, economics in particular, are not possessed by many of IWMI's current research staff, thus calling for both skills enhancement as well as priority-setting in future staff recruitment.

7.10 WARDA (WARDA 2000)

The most significant contribution of WARDA's **Programme on Policy Support** has been **capacity building** and the availability of **analytical tools for assessing the competitiveness of rice production** in four countries (Senegal, Mauritania, Niger and Sierra Leone). A **Policy Analysis Matrix (PAM)** has been developed to facilitate data exchange between rice economists and to guide rice policy development. These Country Policy studies have examined the implications of rice production intensification for rice quality, pricing and gender. However, there is a need to make an overall synthesis of the PAM results across agro-ecologies, production systems and countries. Three workshops were organized on Agricultural Policy Analysis, and about 60 policy economists were trained in PAM. Data collection for PAM in the countries is cumbersome and time-consuming, and is always better undertaken by WARDA's partners. WARDA could then serve in a backstopping role for national PAM studies. WARDA's monitoring of rice markets in West and Central Africa in collaboration with CIRAD and with Rice Monitoring Groups in Guinea, Mali and Senegal was commended.

8. Social Science and Technology Adoption (TA) and Social Science Information Dissemination (ID)

8.1 CIAT (CIAT 2000)

CIAT anticipates the demand-driven **SOL** approach, a network of actors and activities taking place at various sites within a reference site, will encourage farmers and their communities to, through more close interaction with NARS, experiment with and adapt new technologies, thus increasing their self-management capacity. The approach enables resource poor farmers articulate their technology needs more clearly while providing research institutions greater focus to solving the target group's problems. However, the Panel proposed monitoring of the effectiveness of the SOLs in reaching farmers of varying socioeconomic status and gender.

8.2 *CIP (CIP 1995)*

CIP's Social Sciences Department has analyzed many of the factors behind successful adoption of cultivars, which should define the Centre's breeding strategies for its two mandate commodities. To further its insight into technical and socioeconomic factors governing technology adoption and diffusion vis-à-vis its breeding strategy, CIP has agreed to carry out a study in close collaboration with the Philippines and Kenya, distributing clean seeds of up to five 'superior' varieties to 20-30 potato farmers in each country.

8.3 *CIMMYT (CIMMYT 1997)*

The productive capacity of CIMMYT's **Economics Programme** (EP) is evidenced by the number of high-quality publications. It has overall responsibility for producing the Centre's *Wheat and Maize Facts and Trends* series, which has proved to be extremely useful. There is, however, a need to incorporate more analytical content in this publication.

8.4 *ICARDA (ICARDA 2000)*

Under ICARDA's **Socioeconomics of Agricultural Production Systems** Project, socioeconomic factors operating at farm, village and national levels that influence technology adoption continue to be studied, for instance: ways in which women could have increased access to productive resources namely credit and land; and identification of appropriate income-generating enterprises in which women have a comparative advantage.

In 1995 ICARDA launched a *Social Science Papers* Series which is averaging one publication per year, including two informative West Asia and North Africa (WANA) regional overviews.

8.5 *ICLARM (ICLARM 1999)*

ICLARM's program direction reflects its sensitivity to the need for social science capacity to facilitate dissemination and adoption of technology. As part of ICLARM's **Information and Training Program (ITP)**, the NAGA publication includes a social sciences section.

8.6 *ICRAF (ICRAF 1998)*

Promising ICRAF technologies, after being adequately researched, are assessed (second phase) by a limited group of farmers in the form of Village level workshops and by Adaptive Research and Dissemination Teams (ARDTs); biophysical and socioeconomic impact indicators are identified. Through the third phase, the true dissemination and development phase, the technologies reach a broader population of farmers.

8.7 *ILRI (ILRI 1999)*

Concerning ILRI's **Crop-Livestock Research**, although traction has an important role in farming systems, research on using cows for traction in feed-limited environments, for instance the Ethiopian highlands (Project 13), is unlikely to be successful because of an unfavourable trade-off in milk yield, particularly in low-income households. Evidence points to an inherent farmer preference for cash income compared to longer-term benefits.

8.8 *IPGRI (IPGRI 1997)*

IPGRI established **COGENT** to support research relevant to improvement of coconut production worldwide. The logistically complex task of wide diffusion of new improved planting materials to small farmers vis-à-vis large plantation owners, especially in the case of the numerous islands in the Pacific, calls for a major re-assessment of programme design. The IPGRI Panel outlined possible approaches to ensuring decentralized production of seednuts in quantities and at a price attractive to small farmers: broad surveys throughout the coconut distribution areas **involving farmers in identifying individual palms and populations characterized by high yields** and other favourable characteristics; a 'Small Farmer Participatory Breeding' approach, orienting selection/breeding to their requirements and drawing on local diversity; establishment of local seed gardens with progenies of selected palms, possibly complemented by other materials in coconut production centres, for **evaluation by farmers**.

8.9 *IRRI (IRRI 1998)*

In step with the progressive multidisciplinary nature of IRRI's research agenda, its Agricultural Economics Department (AED) was converted into the Social Science Division (SSD) in 1990. The purpose was to assemble together economists, rural sociologists, anthropologists, gender specialists, and geographers to address constraints to technology transfer/adoption. Establishment of GIS capability has improved mapping and understanding of regional problems and developments.

One of the indicators of the strength of social science at IRRI is the creation of the *Ricestat International* and *Country Sources* database.

8.10 *IWMI (IWMI 2000)*

In Sri Lanka, IWMI's support for the institutionalization of participatory irrigation management has been effective. In **Nepal**, IWMI's action research demonstrated farmer capabilities for contributing to canal rehabilitation. Methodologies have also been developed for farmer-to-farmer diffusion of management innovations.

There is very little published research on women and irrigation and much of the little that is available comes from IWMI. IWMI's Policy, Institutions and Management (PIM) staff have successfully analyzed gender-poverty linkages relating to water management, helping chart IWMI's future research direction. PIM's research has covered a range of issues in a variety of agricultural settings: the division of labour by gender in different irrigation systems; the constraints on women's access to water; the importance of women head-of-households in irrigation; and the role of women in water users' associations. The causes and effects of poverty may be different for women and men, even in similar settings. The basic question is what is the impact of increased access to water on productivity and incomes of poor male and female smallholders under the sub-categories of: landlessness; ecological poverty; and the poverty of remoteness. The publication record of IWMI's **Linking Gender, Poverty and Water** project, being judged as satisfactory-to-high, augurs well for its future impact.

8.12 *WARDA (WARDA 2000)*

A Task Force (TF) is a network of NARS and WARDA scientists that together identify research priorities and carry out research and share results. Two of the current Task Forces are: the Economics Task Force and the Technology Transfer Task Force. WARDA's adoption studies, draw on the Rice Economics Task Force composed of social scientists from each of the member NARS.

9. Social Science and *Ex-post* Impact Assessment (EPIA)

9.1 CIAT (CIAT 2000)

At CIAT, socioeconomic research has been reorganized so as to concentrate mainly on assessing impact of Centre's research. TAC is pleased to note the major effort and investment to document such impact, and notes this activity ranks first on the list of priorities on the social science research agenda.

CIAT's **Impact Assessment (BP-1) project, on the basis of impact of adoption** of CIAT research outputs on small farmers' livelihoods, sought to: 1) improve CIAT's capacity to more efficiently allocate research resources; and 2) demonstrate to stakeholders the social value of the Centre's research. Earlier *ex-ante* assessments and projected outcomes could accordingly be modified. However, the **methodologies** to measure impact proved inadequate, particularly in terms of quantitatively displaying variation among target group sub-categories, for instance according to gender, income.

The majority of CIAT's socioeconomic analysis studies focus on the adoption of new varieties of beans and cassava, using indicators such as percentage of farmer adoptees. A study on Honduras stands out. It estimates benefits of virus resistant bean varieties in terms of relating bean production area (denoting research output) with poverty incidence maps, concluding that bean research significantly improves the lot of poor farmers through: yield and income increase; reduced income variability; and better coping capacity during economic stress.

Still on the question of impact assessment methodology development, a conceptual framework is being designed for analyzing the relation between social capital and social welfare, in the context of a poor rural community. CIAT's **Smallholder Systems (PE-5)** will develop methodologies for farm-level socioeconomic and environmental impact. Given CIAT's long experience in integrating research on germplasm, natural resources and social science, the Panel recommended that CIAT document the impact of such integration on its target areas and populations.

As for the project **Beans in Africa (IP-2)**, impact assessment studies point to increasing adoption of bean varieties developed by or with CIAT, with positive economic impacts. Some breeders assert that PPB has increased adoption rates of their varieties. Farmers in Rwanda gained significant economic benefits from adopting high-yielding climbing bean varieties. In Uganda, two bush bean varieties were planted on 74% of a study site area, one of which accounts for 90% of bean earnings. **A substantial proportion of low-income adopters reported increased food security.** Concerning the strengthening of local seed supply systems, farmers' groups, including women's groups, have begun to multiply and sell seed from bean varieties they helped to select.

9.2 CIFOR (CIFOR 1998)

TAC concurs with the Panel that only some of CIFOR's activities can be expected to have generated direct impacts on **people's well-being** or on environmental protection. However, TAC wanted to know CIFOR's methodology for empirically measuring the **intermediate** and **ultimate impacts** of its work. CIFOR's Project 9 focuses on impacts and impact assessment overall, and has made considerable strides in **establishing an "impact culture"** among its staff. The Panel notes, however, that CIFOR has yet to **establish empirical measures of its specific impacts**.

CIFOR's Project 7 *Local Livelihoods, Community Based-Management and Devolution* aims to analyze **impacts of devolution of forest governance on livelihoods**. Its intended outputs are: assessment of forest-based income opportunities compatible with conservation; and measurement techniques for such income. The panel considered this project to be central to **CIFOR's goal of improving the livelihood of forest-dependent poor local people**.

9.3 *CIMMYT (CIMMYT 1997)*

CIMMYT's Economics Programme (EP), through its **impact** assessment studies, has helped highlight the impressive global spread of the Centre's wheat and maize varieties. There is an urgent need to understand why 42% of the maize area in developing countries is occupied by unimproved varieties (compared to less than 20% for wheat), and the adoption rate shows little sign of increasing. The socioeconomic **reasons for lack of adoption of improved varieties may** be: preference (e.g., unacceptable quality or other traits), lack of access to seed, or poor performance of the available improved varieties under on-farm conditions. The EPMR Panel found little documentation concerning this issue and suggested impact study findings such as the reasons above assume greater prominence in defining collaboration between the EP, the *Maize Programme* and NARS, in terms of designing commodity research.

9.3 *CIP (CIP 1995)*

CIP has adopted an "*impact assessment culture*", resulting in a series of 9 *ex-post* case studies, in close collaboration with NARS, to document field-level impact on human welfare, by way of: varietal improvement, integrated pest management and seed. Although studies have demonstrated several CIP-related technologies to have yielded an attractive return from the perspective of farmers and involved national institutions, cases of little or no success have yet to be analyzed to draw meaningful lessons for future research planning, for instance small-scale potato processing, TPS in China.

9.5 *ICARDA (ICARDA 2000)*

ICARDA has conducted well over 80 diagnostic, adoption and impact assessment studies since 1988, including assessing the environmental impact of new technologies. However, the study results have still to be synthesized into clear producer/adopter/impact profiles for the region. Furthermore, its social scientists have yet to define types of producers, households or communities for CWANA. In not being able to gauge the influence of the studies' findings on subsequent project design, the Panel felt the urgency for developing profiles of adoption patterns, types of CWANA producers, and types of organizations of production, for instance property systems. It is particularly important to assess the effect on female members of the household who often must resort to non-farm activities to complement their agricultural income.

9.6 ICLARM (ICLARM 1999)

ICLARM's **Policy Research and Impact Assessment Program** evaluates the impact of new techniques, management practices and **socioeconomic structures** on policy decisions concerning aquatic resources. ICLARM is currently in the process of: undertaking a **socioeconomic evaluation** of the **uptake of integrated aquaculture/agriculture technologies** by **poor rural farmers**; and **strengthening capacity** to **assess the impact** of ICLARM-derived aquatic resources technologies. It aims to develop an "impact assessment culture" whereby impact data are collected as part of the day-to-day research process of various projects, efforts supported by the panel.

ICLARM's **Germplasm Enhancement and Breeding Program (GEBP)** evaluates, among others, socioeconomic **impact** of introduction of improved fish breeds into countries in Asia. The impact of ICLARM's research initiative **Small-scale Aquaculture in Bangladesh** has been fish production increase by 1,000 kg/ha/yr and a consequent **household incomes increase** by 12.9%.

9.7 ICRAF (ICRAF 1998)

ICRAF's **Global Programme on Natural Resources Strategy and Policy** seeks to assess *ex-post* the ecological, economic and social impact of agroforestry adoption. ICRAF has undertaken two case studies of **social and economic impact assessment**: (1) northern Tanzania, in an area where there was strong spontaneous on-farm tree planting over the past 50 years, and (2) *Embu*, Kenya, at a site where ICRAF intervened with improved agroforestry tree species. ICRAF has performed farm-scale evaluations (biophysical, social, economic, farmer assessments) for the following techniques: hedgerow intercropping (eastern and southern Africa, Southeast Asia); improved fallows (eastern and southern Africa); biomass transfer (eastern and southern Africa); and live fencing (southern Africa, Sahel).

9.8 ICRISAT (ICRISAT 1996)

Given that its financial shortcomings were a direct result of absence of documented impact of 'products' provided to NARS, the private sector, and farmers, ICRISAT developed the **Research Evaluation and Impact Assessment (REIA)** project, with the aim of integrating *ex-post* impact assessment with *ex-ante* research priority setting. Such integration has taken place within five global projects, envisaging that all the global ICRISAT projects would contain an REIA module. The projects are: **SG2 (sorghum)**, **GN3 (groundnut)**, **PP1 (pigeon pea)**, **ISP1 (integrated systems)**, and **CP1 (chickpea)**. The Panel was impressed with progress achieved on the REIA project, with the interdisciplinary approach adopted, and with the treatment of NARS as essential partners. It was convinced of the REIA initiative as being one of the most active programmes of its kind in the CGIAR System.

Where there has been extensive adoption of ICRISAT's improved cultivars, yield increments, unit cost reductions and IRRs have been impressive. That there would be no impact from millet & sorghum research in West & Central Africa was negated by field survey results. That farmer demand drives the all-important seed multiplication and varietal release was demonstrated in Maharashtra State, India: farmer demand for wilt resistant pigeonpea cultivar **ICP 8863** prompted State Seed Corporation to multiply seed.

9.9 IITA (IITA 2001)

Under the **COSCA project**, started by IITA in 1989, a large amount of information on production, consumption and marketing has been collected and analyzed on 10 cassava-growing countries of Africa.

TAC appreciates IITA took steps to address acknowledged deficiencies in the area of Impact Assessment (IA), initiating seven IA studies and hiring an Impact Generation & Assessment specialist: **an effort was made to undertake socioeconomic evaluation of technologies rather than concentrating on calculating rates of return.** However, many of the impact studies (biological control of the Cassava Green Mite; adoption of dual-purpose dry-season cowpea; importance of socioeconomic and policy factors on the adoption of alley farming; impact of maize germplasm; the dynamics and determinants of the adoption of Mucuna in Benin) were limited in depth, of variable quality, and did not provide a clear picture of the overall extent of IITA's influence. TAC believes the Centre should strive to carry out more quantitative economic and social impact studies, with explicit linkages to its mission. The Panel identified one study, the ***ex-post* social impact study of soybean in Nigeria's southern Guinea savanna** as a useful model for structuring future *ex-post* IA studies. It documents well the positive impact of an innovation on a number of social development indicators, including household income and distribution, material welfare, gender relations, resource use and social equity in the community. The study on the impact of improved soybean varieties in Benue State, Nigeria, found that the nutritional status of children had improved, and women were adopting and benefiting from the soybean almost as much as their male counterparts. The study explicitly used the social impact assessment model based on the **diagnostic-diffusion-adoption-impact continuum** of technology, a systematic way of incorporating socio-cultural factors in the adoption process.

9.10 ILRI (ILRI 1999)

ILRI's Project 11 **Systems Analysis and Impact Assessment** seeks to estimate impact (*ex-post* analysis) of the knowledge, processes, products and technologies developed by ILRI and, accordingly, identify researchable issues that, if resolved, enhance technology delivery/adoption and thus reduce poverty (*ex-ante* analysis). Economic and social benefits accrue due to: i) increased number of *N'Dama* cattle, resistant to Trypanosomosis, which allows higher production of milk and meat as well as growth in the number and quality of animal stock, ii) adoption of technological innovations, and iii) organization of producers through co-operatives as a means to reduce marketing costs for milk produced in small households. The Panel encouraged ILRI to continue assessing its overall impact as a basis for its immediate revision of its strategic plan, incorporating social science research.

9.11 IPGRI (IPGRI 1997)

In crediting IPGRI for its substantial effort at impact assessment, the Panel praised the study of regional subject matter research impact, as being complementary to conventional impact assessment, the latter strongly oriented toward economic quantification. The activities of the **SSA Group** have decisively contributed to much enhanced awareness of and commitment to PGR conservation and use.

9.10 IIRI (IRRI 1998)

IRRI established the **Agricultural Economics Department (AED)** in 1966 to: undertake **impact assessment** of technological changes associated with the introduction of IR8 and succeeding varieties; and to identify constraints to the adoption of new technology by region and farmer category. Following AED's transformation to a **Social Science Department**, it is performing commendable research on: evaluation of the nature and extent of new technologies on income distribution and poverty of different socioeconomic groups and women across different ecological regions (*ex-post* impact). The results provide useful guidelines for future policy and planning. Assessing such differential impact of technology changes was the very aim of a survey initiated in 1996. However, socioeconomic studies being confined to rice only, provide just a partial picture of the impact of new technologies on household income and living standards. Hence, there is a need to cover other crops together with allied farm and off-farm activities.

The process and outcome evaluation methodology developed by IRRI scientists for undertaking *ex-post* impact assessment, since 1986, has been based on generating, jointly with NARS, in-depth household-level data on economic activities. Using this set methodology, several major studies have been published, the latest being a joint IRRI-NARS Differential Impact Study (DIS) by David and Otsuka (1994), covering China, India, Bangladesh, Nepal, Thailand, Indonesia, and the Philippines. Also in 1994, IRRI launched a project to re-survey these villages with the same methodology to generate "two-point" data, toward continued assessment of household-level impact of new technology.

9.11 IWMI (IWMI 2000)

There has not been a formal assessment of the impact of IWMI's **Policy, Institutions and Management Programme (PIM)** research outputs, nor are there current plans for such an exercise. Only some informal indicators of impact can be noted: PIM's research and publications have stimulated independent Irrigation Management Transfer (IMT) work by other researchers in both advanced institutions and NARS. IWMI's research findings on IMT have become a model, widely used by irrigation departments and policymakers for initial planning, implementation and assessment of their own IMT activities. Their impact on policies and strategies for institutional reform in Pakistan is a case in point. It is to the credit of IWMI's field-based research projects that IMT has, in recent years, achieved prominence in terms of institutional policy in the water management sector, and is a topic of continuing interest to researchers worldwide.

9.12 WARDA (WARDA 2000)

Varietal improvement has increased farm revenues (on average by US\$ 100 per hectare), but much more so in irrigated and rainfed lowland areas. On average, gross revenues per hectare from varietal improvement in the irrigated areas have increased by US\$ 232 and by only US\$ 32 in the uplands - the two extremes. Thus, the poorest farmers, who predominantly live in the uplands, have not yet benefited. Worth monitoring is the potentially high impact of the interspecific NERICA varieties, which are targeted to the rainfed uplands, in terms of food security, poverty alleviation, and natural resources protection.

For the Sahelian irrigated sector, independent researchers Monica Fisher, William Masters and Mamadou Sidibé of Purdue University estimate that the **payoff to research, development and spread of three high-yielding irrigated rice varieties** (Sahel 201, 202 and 108) by WARDA's Sahel station, in collaboration with ISRA, is likely to exceed 100% per year

over the period 1995-2004. The estimated internal rate of return is in fact 116% with a standard variation of 39%.

Based on WARDA's **Farm Management Household Survey** database, production functions were estimated to analyze the impact of different rice production technologies on labour use. However, the database has been poorly exploited, in the context of *ex-ante* and *ex-post* impact assessment, due to staff constraints. Protocols and procedures for data collection from field studies need to be much better documented, to enable proper archival for easy retrieval in a WARDA institutional database. For instance, the database has many files that are not usable due to weak or absent collection protocols and procedures. There is a need to extrapolate and validate the farm level results to larger agro-ecological zones and areas.

10. Social Science Research Capacity at the CGIAR Centres (SSRC-C)

10.1 CIAT (CIAT 2000)

In its NRM research, CIAT has encouraged participatory methods as part of the culture of biophysical scientific research. Concerning the achievements of CIAT's **Hillsides Project (PE-3)**, a systematic and coherent programme of biophysical or social science research at either of the two reference sites in Central America is lacking as are appropriate baseline data from which to track changes over a 4-year period. In pursuit of such rigor and coherence at each reference site, building on the special skills and talents of social scientists and biophysical scientists, the Panel suggests that scientists deepen their relationship with farmers by living close to the reference sites and not in capital cities.

The Panel commended CIAT for innovative PRM which enables: breeders to incorporate user preferences in complex socioeconomic-ecological systems; integration of germplasm-based technologies with more sustainable natural resource management practices within these systems; and farmers to more efficiently interact with NARS. Referring to CIAT's project **Improving Productivity: Beans for Latin America (IP-1) -- Overview and Assessment**, the Panel, while endorsing the approach aiming toward higher adoption and impact, noted that Participatory Plant Breeding (PPB) at the farm/community level, suffered from inadequate inputs from systems agronomists and social scientists. It made a recommendation to this effect.

10.2 CIFOR (CIFOR 1998)

TAC recommends that CIFOR **expand** the set of **relevant social indicators** to include, among others, **determinants of collective action** and **patterns of social organization** in forestry activities.

CIFOR management rightly feels that large gains can be achieved now through in-depth examination of **social, institutional, and tenurial dimensions of forestry**. TAC had, in the past, pointed to the importance of CIFOR's sociological and economic research, and the need to evaluate these two areas separately rather than collectively as "socioeconomic research". The EPMR Panel noted, that while CIFOR had registered very significant progress in promoting interdisciplinary approach in its projects over the last five years as a model for its partner institutions, the **Centre** had not drawn a distinction between **social-anthropological** research and economic research, when assessing quality.

In selection of research sites, CIFOR should pay greater attention to pertinent **social diversity** so as to **enhance research quality** in terms of utility of the results and enable qualification of yield generalizations.

CIFOR's projects encompass multiple cross-cutting themes, among others: poverty and local livelihoods in forest margins; devolution and community-based management of forests. Increasingly, non-forestry professionals (for instance **anthropologists, sociologists, economists**) began to **play larger roles** in the research and **debates**. While some of the current projects are operating smoothly, the design and implementation of others are marred by the **differences in training and tradition** between **biophysical and social scientists**. The **statistical precision demanded of biophysical scientists** does not mesh in easily with the **human variability**, inherent within **sampling by social scientists, based on participant observation, interviews and questionnaire surveys, often with uncertainty surrounding question formulation**. CIFOR projects must continue to appropriately link quantitative **data** more familiar to biophysical scientists and economists with qualitative **data collected by sociologists and anthropologists**. The Panel suggested that CIFOR commission a review (or workshop) on the **development of methodologies for interdisciplinary work**.

In any institution seeking interdisciplinary approaches to rural poor's problems, the continued active recruitment of women and social scientists becomes critical. In **CIFOR**, half of the **social scientists** and one sixth of the **biophysical and forestry scientists** were female.

10.5 CIMMYT (CIMMYT 1997)

In recent years, the opening up of new frontiers in two broad areas of science, viz. biotechnology and information technology coupled with the very significant move toward a **multidisciplinary project mode** make it imperative to ensure a much closer interaction between the social scientists, biological scientists, and the user community, in the context of CIMMYT's EP. The EPMR Panel suggested that the increasing diversity of its work programme warranted the EP gradually establish itself as a **Social Science Programme**, rather than as an Economics Programme.

10.2 CIP (CIP 1995)

The Panel recommended CIP avail of the opportunity to capitalize on the information generated on both crop performance as well as evolving socioeconomic settings to develop analytically valid strategies for CIP's involvement on each mandated commodity (*ex-ante* needs assessment), disaggregated by region. For the specific agronomic-socioeconomic context, the strategies should also spell out final deliverables and milestones for achievement. The Panel noted CIP's social science research capacity was lower than what was assumed, since highly-capable social scientists were engaged in administrative functions, such as heads of stations. This situation called for CIP management's attention.

10.6 ICARDA (ICARDA 2000)

ICARDA presently has 14 social scientists, with the non-economist group comprising a mix of disciplines including anthropology, human geography, property rights, and nutrition. There has been a substantial level of integration between social science and other disciplines within the Centre, as demonstrated by 60 % of its publications (mostly economic studies) being

cross-referenced as joint publications with non-social science projects. The anthropologist, through participatory barley breeding, has played a major role in this respect. However, despite more than 10 years of anthropology input in the Centre, ICARDA has not yet integrated anthropology (human and cultural ecology) into natural resources research. ICARDA's future research on socioeconomics of production systems will place greater attention on farm household variables such as gender and off-farm income sources as well as community-level and environmental variables. The ICARDA/IFPRI partnership in the **M&M project** serves as a good model for ICARDA's future socioeconomic research: this partnership integrated research on policy, institutions and property rights with technology testing.

Statement in ICARDA's 1998-2000 MTP: "ICARDA is committed to working with farmers and pastoralists, through partnerships with NARS, to develop technologies that are both more productive and sustainable and contribute to the alleviation of poverty in the dry areas". In the face of disappointing field impact (yields) for ICARDA's mandate crops and in shifting their emphasis from evaluating technological innovations to the institutionalization of farmers' participatory research, ICARDA social scientists, under the Germplasm Enhancement Programme, put into practice an innovative approach to barley breeding for resource-poor farmers in marginal environments. The Panel suggests ICARDA should improve its field investigative capacity in the non-economic social sciences by recruiting, training, and using mobile cadre of "farmer-researchers" from women and men in the countryside. They would independently carry out research after project completion. ICARDA should also arrange annual 1-3 day off-station retreats of all social science staff, assisted by appropriate advisors from, possibly, other disciplines, to refine unanswered critical research questions.

In beginning investigations into determining the most appropriate ways for research to help alleviate different kinds of poverty, ICARDA social scientists, under the **Socioeconomics of Natural Resource Management in Dry Areas Project**, constructed and mapped national-level rural poverty indicators. While ICARDA social scientists routinely collected information on social variables, this information was, according to the Panel, too often not analyzed in a timely manner, synthesized, and published, thus reducing its utility. The social scientists have yet to develop an internationally recognized and defined focus: their analytical tools have been basic, standard and non-innovative.

As for ICARDA's **Native Pasture and Range Improvement Project**, during 1993-99, degraded areas were identified for restoration on a priority basis, with the collaboration of pastoral communities. The EPMP Panel suggests identification of management options and information currently used by pastoralists.

TAC reiterated the recommendation of ICARDA's 1994 EPMP that "ICARDA should conduct impact studies of its major technologies" and which was not fully implemented. Such studies will be facilitated by improving the quality of the social science programme.

10.7 ICLARM (ICLARM 1999)

TAC concurs with the ICLARM EPMP panel that the Centre **conducts** a cohesive **research** programme of **good quality science**, including economic, **social and anthropological research**: ICLARM has shifted from a limited number of technical topics **toward more broad-based, socially relevant work** involving improved **biological, socio-economic and policy/institutional** mechanisms for sustainable management of aquatic resource systems. The

Centre recognizes the future need for social science research, as being *on par* with technology research, and the importance of maintaining a critical balance between the two.

However, in pursuit of rationalizing and consolidating its nine programs into a smaller, more coherent set of interacting programs, ICLARM has to articulate an operational strategy that lays out the linkages across programs of work in aquaculture and in social science and policy research. The derived resource management outputs serve a wide range of clients, from fishing families to aquatic resources research scientists, extensionists and policy makers. Although most of the programs contain policy and social sciences elements, not all have the resources to engage full time social scientists: the **Policy Research & Impact Assessment Programme (PRIAP)** should support the rest of the programmes through social science/economics activities. Here, the Panel was concerned by the shortage of social and policy scientists, particularly at the senior research level, in light of multiple demands.

The Panel viewed with some concern the continued minimal input of social science and economic analysis within ICLARM's **Coastal Aquaculture and Stock Enhancement Program (CASEP)**, a weakness identified earlier. The Panel suggested that future planning of the CASEP consider socioeconomic dimensions at an early stage to enable biological and economic analysis to proceed concurrently. The panel suggested the same in the context of consolidating and increasing the benefits of the **Marine Protected Areas Project** under the Fisheries **Resources Assessment and Management Program (FRAMP)**. Similarly, the CCER believed ICLARM's **Integrated Aquaculture-Agriculture Systems Program (IAASP)** would benefit from increased sociological and anthropological orientation. The panel noted the proposal to increase social science input to this programme, particularly by way of increased collaboration with other CGIAR Centres working on IAA issues in Africa.

A 1997 **Centre Commissioned External Review (CCER)** of ICLARM's **Integrated Aquaculture-Agriculture Systems Program**, carried out by two well-qualified experts in rural aquaculture and agricultural economics respectively, concluded the programme, while being **strongly influenced by social and economic conditions** within the largest communities, had **no qualified staff to research these issues**. It called for immediate recruitment of such staff.

10.8 ICRAF (ICRAF 1998)

ICRAF's achievements include: understanding of biophysical and social interactions and their implications for agroforestry systems, soil fertility replenishment and **agroforestry technology**. TAC encouraged ICRAF to take into account in its programme orientation and quality control the importance of sociological and economic research and the need to evaluate the contributions of each separately rather than collectively as "socioeconomic research". It urged greater attention to social and institutional strategies matching technological recommendations in agroforestry, and further affirmed selective research be linked to constraints/needs assessment with partners.

The EPMR Panel felt ICRAF was beginning to develop an understanding of the appropriateness of varied dissemination and adoption pathways under different social, cultural and environmental conditions (enabling components), and urged a deepening of the same.

10.9 ICRISAT (ICRISAT 1996)

ICRISAT's economics work is now implemented under the auspices of the **Socioeconomics and Policy Division (SEPD)**. All SEPD scientists are economists, involved in 19 of the 22 multi-disciplinary globally oriented projects. Three of them are Project Team Leaders. The SEPD was developed in response to a previous EPMR observation regarding the low proportion of research resources devoted to socioeconomics as compared with other CGIAR institutions as well as the 1994-98 MTP's prescription for a greater economics input. This MTP identified 4 disciplinary areas for the SEPD: *Markets and Policy*, *Germplasm Development*, *Resource Management & Sustainability*, and *Impact Assessment*. *Germplasm Development* targets breeding strategies and engages in adoption studies.

ICRISAT is confronted with two unresolved issues: the dilemma between the location specificity of the gender theme and the need to be able to extrapolate findings over wider areas; and identifying the appropriate balance between efficiency (developing acceptable technologies adapted to the farmers' situation as gauged by gender analysis) and equity (selectively targeting women farmers). Toward ensuring continued monitoring of gender-related issues, the Panel proposed that ICRISAT arrange for annual visits by the CGIAR Gender Programme consultant. Furthermore, it was vital that gender findings relating to *ex-post* adoption/impact studies are duly reflected in *ex-ante* technology design.

While recognizing the recent OFR activities have been distorted by the emphasis on having to prove impact (hence partly accounting for the dominance of variety verification trials), it was concluded that ICRISAT should become more strategic in focus with greater attention to methodological development and training. It was noted that certain deficiencies had to be rectified in the OFR skills of ICRISAT staff, namely: use of a wider range of alternative experimental designs; adaptability analysis of on-farm trials (quantitative) and more detailed site characterization (qualitative) to improve the potential scaling-up of results. There was a need for improved data recording strategy, and data collected by ICRISAT scientists had to be documented and made freely accessible, after a suitable grace period. Greater balance was necessary among 5 types of OFR, including diagnosis, on-farm technology development, technology evaluation, technology verification, and adoption impact studies. Despite well-motivated efforts toward fostering economics support for the total research agenda, critical mass was needed by way of: greater interdisciplinarity within OFR; and better integration of social science and biological science. Furthermore, the link-up with NARS had to be reinforced, and a more representative set of farmers selectively targeted toward greater applicability of OFR results.

In noting the importance of farmers' assessments and opinions to evaluate ICRISAT's results, the EPMR panel suggested examining the potential of PRA techniques (e.g., matrix ranking and scoring), perhaps with a few farmers' groups, to clearly track down the relative influence of different constraints inhibiting adoption, and accordingly shape research and policy support priorities.

10.10 IFPRI (IFPRI 1998)

TAC is concerned about the large predominance of economists among IFPRI's staff, given the inadequate attention to the role of alternative income generation activities in poverty alleviation/rural development beyond food consumption at the household level.

While considerable progress has been made by IFPRI over the years in measuring the impacts of biophysical research, e.g., plant breeding, the same is not true of social science and,

particularly, policy research. The Panel felt it will be long before definitive, quantitative assessment of final impact of policy research on the human condition and sustainable development becomes possible. All the same, IFPRI should continue to develop improved understanding of and means for assessing impacts of social science and policy research.

10.11 IITA (IITA 2001)

TAC concurs with the IITA Panel's finding about the need for senior leadership for better guidance and integration of social science research into the Centre's overall programme. The Panel strongly encouraged IITA to immediately strengthen research capacity in social sciences by way of: appointing, through various innovative options, an eminent agricultural economist to provide leadership; and ensuring representation of a senior economist on the Research Programme and Executive Committee (RPEC). It also called for adequate incentives for publishing in international journals, in the fields of economics and other social sciences. Assessing the quantity and quality of the contribution of social scientists is, at best, difficult. Moreover, the lack of a cohesive group of social scientists at IITA within an identifiable programme complicates matters further. Using the publications from 1995 to 2000 made available to the Panel as a yardstick for social science quality, the Panel was pleased to see the increased frequency of co-authorship between the social scientists and biophysical scientists, and commends the publication of articles in journals outside the economics field. However, in several of the articles published in the non-economics journals (e.g., *Crop Protection*, *International Forestry Review*, *Agroforestry Systems*, *African Journal of Roots and Tubers*), the Panel expressed concern over the rigor of the economic theory and methods used: the flawed findings and conclusions serve little toward formulating sound recommendations on priority-setting.

Although IITA has filled the position of impact assessor, the current position focuses on the process of diffusion and adoption of technology, giving less attention to documenting the social and environmental impacts of adoption.

10.12 ILRI (ILRI 1999)

TAC strongly endorses the Panel's recommendation that ILRI give immediate attention to revising its strategic plan, specifying clearly the proposed role of social science research, in view of the importance of **socio-cultural research variables** in animal husbandry. TAC is concerned about a virtual absence of sociological research, and welcomed ILRI's commitment to building sociological capacity among its research staff. TAC strongly endorses the Panel's recommendation that ILRI should give immediate attention to revising its strategic plan, showing how it expects to develop its programmes, on the basis of assessment of its overall impact over the last four years. TAC urges ILRI to specify clearly in the strategic plan the proposed role of social science research, in view of the importance of socio-cultural research variables in animal husbandry. TAC discussions emphasized that at the core of crop-livestock systems are the farmer-producers, and welcomed ILRI's commitment to incorporate sociological capacity soon among its research staff.

10.13 IPGRI (IPGRI 1997)

The IPGRI Panel concurs, as being realistic, with the five research areas identified as requiring international support, among them, socioeconomic issues influencing **small farmers' participation** in rehabilitation and replanting. The nature of IPGRI, being basically a

science/research-based **service** organization to national programmes and the PGR conservation community in general, demanded a needs-driven approach to setting objectives and formulating programmes, in terms of the close involvement of actual or potential partners (farmers, NGOs, conservationists, national and international organizations, and policy-makers).

IPGRI's EPMR Panel expressed interest in the area of economic consequences of different Genetic Resource policy options.

As regards IPGRI's INIBAP, in step with the development of IPM programmes with NARS, the role of on-farm participatory evaluations by farmers becomes essential, possibly involving some highly qualified NGOs as partners. While bananas and plantains are largely grown by smallholders, it is urban consumers' preferences that will govern product marketing in terms of post-harvest handling and transportation. The Panel thus suggested INIBAP develop with IITA the criteria for a broad-based research and technology transfer programme in IPM with the participation of both stakeholders.

The EPMR Panel concurs with the CCER recommendations with reference to, among others, enhanced training and documentation. It recommended IPGRI establish through SGRP, a Documentation Advisory/Support Group, comprised of documentation specialists from various advanced institutions. This Support Group would facilitate documentation pertaining to surveys, GIS and farmers' data, and promote training. Activities planned for the future as per the IPGRI WANA Regional Strategy lay emphasis on, among others: training in *in situ* conservation.

10.14 IRRI (IRRI 1998)

Although IRRI's impending addition of a sociologist and a gender specialist strengthens its Social Science Department (SSD), the Department itself perceives the need for an **IRS policy** economist, as indicated in the MTP.

10.15 ISNAR (ISNAR 1996)

ISNAR, according to the Panel, should develop a distinctive leadership capacity in: the production, acquisition, and delivery of knowledge about policy, institutional environment, and management of NARS; and, based on this knowledge, improving policies, partnerships/linkages with NARS in the poorest countries, and management of the organizations.

10.16 IWMI (IWMI 2000)

The EPMR panel recommended IWMI examine PIM's possible further role in IMT, particularly equity in access to water and the private sector's capacity to manage water resources, in view of the sector's growing role in rural water supply and national irrigation systems.

IWMI's notable research achievements include, among others: an integrated, holistic approach to water management (river basin perspective); new methodologies of water accounting; and insights on the water management-poverty, water management-gender and water management-health linkages.

IWMI has been able to integrate staff with socioeconomic and bio-physical disciplinary backgrounds: this interdisciplinary approach is held out as one of IWMI's major strengths, and as a model for other institutes to emulate. IWMI was deemed particularly well-placed to show that

interdisciplinary research can generate impact, whereas it so often merely receives lip service, and avoided in practice. However, a substantial number of the staff have to invest the extra effort to learn something of neighbouring disciplines in addition to maintaining their own: the future planning of Programmes should ensure some mixing of staff from these two different backgrounds.

10.17 WARDA (WARDA 2000)

Lack of continuity in WARDA's socioeconomic research programme, both on the production economics and policy sides, has disrupted progress. The small number of social scientists combined with their relative professional isolation and financial constraints have meant a low research and publication output. While the relevance of WARDA's research conducted is good, its quality high to very high, the Panel urged the Centre to explore how to strengthen the socioeconomic component of its research.

In the case of **WARDA's Programme 2 - Irrigated Rice**, the Panel believed the complex nature of irrigated systems demanded that research be focused less on fields and more on **farm household and communities**, these lending themselves to integrated biophysical and socioeconomic research, leading to more locally adapted technologies and practices. For instance, the requirements of farmers growing rice on small plots in inland valleys are quite different from those specializing in irrigated rice in river plains.

WARDA's **Programme 4: Systems Development and Technology Transfer** lacks research content, has little or no critical mass of scientists, nor is it able to address the policy and institutional questions. The result is a slackening of the pace at which WARDA progresses along the research-to-development continuum, and commensurately its contribution toward the emerging rice production revolution in West Africa. On this Programme, the EPMR Panel urged: establishment of a new strategic research agenda on technology transfer needs, and to focus on the major social and institutional constraints to adoption of rice technologies; and continued understanding of the existing knowledge and social systems to speed diffusion of new rice technologies, as is being done in the use of indigenous knowledge and social exchange networks in the Community-Based Seed Systems (CBSS) work. The programme may require a disciplinary mix of scientists, including sociology and anthropology, which is not currently available.

10.18 SGRP (SGRP 1998)

The relevance of incorporating gender into policies and practices relating to biodiversity conservation has been recognized only recently. All CGIAR projects are required to explicitly state their expected impact on women. The CGIAR has made a contribution to enhancing awareness about women's very significant role in agriculture generally, and in the local management of natural resources in particular. IPGRI's programme on *in situ* conservation, comprising projects in a number of countries, has a gender component. However, the SGRP has yet to undertake research, of either diagnostic or action-oriented nature, in the field of gender and biodiversity.

Given the **lack of knowledge on gender analysis in biodiversity conservation and use**, the Panel called on the SGRP to engage in: developing methodologies for diagnostic and participatory research in this area; developing criteria for conservation concerning post-production stages, often a woman's domain, through networking between CGIAR System and

other institutes; improving linkage between social science and “technology” disciplines influencing Genetic Resources conservation; linking up with other Systemwide initiatives employing new gender analysis methodologies, for instance on-going dialogue with SWP/PRGA network; and institutionalizing those innovative approaches with proven success.

Although successful adoption of modern improved varieties tends to be limited to the High Potential areas, new developments in crop varietal improvement, namely **decentralized participatory plant breeding by farmers**, are directed at the more marginal production environments. Aside from production, these initiatives include other aspects of the food system such as processing, storage and nutrition. **These farmers, while being the major holders and suppliers of landraces to genebanks, have failed to benefit from institutional plant breeding.** With the CGIAR’s mission being poverty alleviation, the SGRP Panel recommended that the SGRP develop participatory breeding methodology, as part of a more active role in **participatory plant breeding**, in support of on-farm crop improvement.

10.19 SPEA (SPEA 1999)

Many ecoregional programmes successfully apply socioeconomic and agro-ecological information to an identified problem set, within a defined geographical region. However, initiatives to improve the disciplinary balance between technical and social science research have been variable: in pursuit of this balance, the Panel recommended considerable strengthening of the latter. The Panel felt a Revised Conceptual Framework for NRM Research that characterizes the research domain, in terms of biophysical, socioeconomic, market and policy variables, as being key to understanding the problem, designing and executing research and extrapolating the results to similar situations. The respective Output Indicators would relate to: soil and water resources, pest populations and conservation of agro-biodiversity (bio-physical); and household income/human welfare increases (socioeconomic). Through appropriate partnership building, another output indicator would reflect strategic knowledge development concerning, among others, socioeconomic processes in NRM, and efficiency-enhancing applied research tools and techniques. The Panel suggested a sound understanding of these processes and techniques would enable extrapolation over areas with similar characteristics.

One handicap to achieving a better disciplinary balance between technical and social science research is the exceedingly low social science research capacity within NARS, with reference to NRM. This weak capacity may explain the un- or under-utilization of NRM research results. Aside from inadequate expertise in economics, sociology and anthropology, there may be a major weakness in strategic research on farmer and community decision making, concerning NRM.

11. Concluding Remarks

The information compiled in this document is an inventory of social science activities in the CGIAR as seen through the TAC-commissioned external reviews since 1995, and the views of TAC and the review panels regarding aspects related to social science research capacity. The information regarding the social science research and research capacity from a particular Centre may not necessarily reflect the current situation at that Centre. This is because both research and research capacity are likely to change in the light of experience from past and ongoing research, the research issues that are being addressed and new emerging issues, how the research effort is organized, and the availability of resources. Nevertheless, the information in this document does

provide an overview of the nature of social science activities in the CGIAR in recent years, although the social science activities under CAPRi and PRGA, which are substantially of a social research nature, are not directly covered in this document as PRGA has not gone through an external review and the external review of CAPRi is ongoing at present. However, the participatory mode of operation adopted by these Programmes has ensured that all Centres contribute to the development of the relevant research themes of these Programmes, and in the production of public goods for the benefit of the Centres, their partners and other stakeholders, and the ultimate beneficiaries.

In 1995, TAC commissioned a Systemwide study of policy, public management and institution strengthening research and service in the CGIAR (TAC 1996). The study report addresses issues of priorities and strategies for policy, management and institution strengthening activities and provides an informative overview of the status of social science activities in the CGIAR for the period prior to 1995. In 1987, 1990, 1992 and 1997, TAC reviewed the CGIAR priorities and strategies at the System level, and the TAC documents (TAC 1987, 1990, 1992, 1997) provide useful historical information on the evolution of social science activities in the CGIAR.

An overview analysis of the information on social science activities in the CGIAR contained in this document, in the above mentioned TAC documents, and in the TAC document on the new CGIAR vision and strategy (TAC 2000) is given in a separate paper (Kassam 2002) prepared for the social research conference.

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