

# **A Normative Framework for Social Science Activities in the CGIAR\***

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\* Without implicating any of them, I wish to thank the many individuals who have informed the thinking reflected in this paper. While few, if any, of them would agree with everything written here, much of the value of this document is attributable to the wisdom and insights shared by social scientists and managers at multiple Centers, including CIMMYT, ICRAF, ICRISAT, IFPRI, ILRI and IWMI, and by experienced observers of the CGIAR, such as Akin Adesina, Harold Alderman, Mariza Luz Barbosa, Randy Barker, Derek Byerlee, Michael Carter, Alain de Janvry, Ken Fischer, Mike Gale, Hans Gregersen, Bob Herdt, Melissa Ho, John Lynam, Paswel Marenya, Rey Martorell, Rebecca Nelson, Alice Pell, Per Pinstrup-Andersen, Tom Reardon, Scott Rozelle, Jim Ryan, Pedro Sanchez, Emmy Simmons, Bob Thompson and Greg Traxler. The Science Council Secretariat, especially Sirkka Immonen and Ruben Echeverria, provided extensive data, documentation and guidance that has helped keep this first phase of the social science stripe review on track. I am indebted to these individuals, and many others. But I alone bear all responsibility for any errors of fact or logic that remain.

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## Introduction

The CGIAR is going through a change process.<sup>1</sup> The proposed new vision is: “To reduce poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience through high-quality international agricultural research, partnership and leadership”. The CGIAR’s key objectives are to: 1) Create and accelerate sustainable increases in the productivity and production of healthy food by and for the poor; 2) Conserve, enhance and sustainably use natural resources and biodiversity to improve the livelihoods of the poor in response to climate change and other factors; and 3) Promote policy and institutional change that will stimulate agricultural growth and equity to benefit the poor, especially rural women and other disadvantaged groups.

The CGIAR has a distinguished history of success in these endeavors, successes in which the social sciences have historically played a prominent role. But there is a widespread sense of discontent with the present state of the social sciences within the CGIAR, some of which may reflect broader concerns about the CGIAR in general, and some of which may be specific to the social sciences within the System. As a direct result, the Science Council of the CGIAR has commissioned a stripe review of the social sciences in the CGIAR. The current global food and fuel price crisis accentuates the need for a reinvigorated CGIAR to help reverse the structural problems in global agriculture that have emerged over the past several years.

Per the terms of reference for phase 1 of the stripe review, the panel Chair was tasked to “develop, in consultation with the SC Task Force, a normative framework for a high-quality and effective social science research agenda, which, if operationalized, would advance research on the CGIAR System Priorities and effectively contribute to achieving the CGIAR goals. The framework represents an “ideal” of what the CGIAR should expect from its social scientists against which the Panel can assess the actual situation.” This paper is the product of that effort. It builds on a descriptive assessment desk study undertaken by a consultant,<sup>2</sup> and feeds into the draft terms of references for phase 2 of the stripe review. Together, these three documents comprise the outputs of phase 1 of the review.

## Definitions

It is essential to establish a few key definitions for this paper and the stripe review of which it is a part. First, the “social sciences” comprise those disciplines that apply scientific methods to the study of individual and collective human behavior and outcomes. This includes anthropology, economics, geography, law, political science, psychology, and sociology, as well as derivatives of those fields (e.g., agricultural economics, rural sociology) and social science-oriented branches of the biological sciences (e.g., community nutrition). Second, “research” refers to the systematic investigation to establish facts with the purpose of advancing useful human knowledge. The CGIAR’s domain of social science research focuses specifically around the production of pro-poor knowledge in the fields of agriculture, forestry, fisheries, policy, and environment that satisfies the criteria of

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<sup>1</sup> A new vision, research focus and organizational design for the CGIAR are currently being considered as part of the ongoing CGIAR Change Management Initiative. Any such changes will necessarily have far-reaching effects on the social sciences within the CGIAR. This paper dares not try to predict the scope, extent or even direction of such prospective changes. But phase 2 of the social science stripe review, which this paper is meant to inform, must pay close attention to that Change Management process.

<sup>2</sup> Paswel P. Marenja, A Background Study for the CGIAR Social Sciences Stripe Review, August 2008.

“international public goods,” (IPG) meaning the knowledge is freely and publicly available (“nonrival” and “nonexcludable” in the technical jargon of economics) to the benefit of the peoples of multiple nations. Note that this does not imply global impact; a *global* public good has spillover benefits for the entire world, an *international* public good’s spillover benefits may be more spatially restricted. Given the heterogeneity of different world regions’ needs for agricultural research, the IPG standard is the appropriate one for the CGIAR. Multinational funding from public and philanthropic sources necessitates careful attention to both the IPG criterion and to the pro-poor emphasis of the System’s activities, which are meant to complement research activities undertaken or financed by the for-profit private sector or national or sub-national governments.

### **Evolving System Priorities and the Social Sciences**

In order to craft a clear vision of where CGIAR social sciences should be, or go, it is essential to reflect a bit on the path they have followed to this point in time. This is not the place for an exhaustive, nuanced history of the social sciences in the CGIAR<sup>3</sup>; therefore, what follows necessarily oversimplifies. But brief reflection on the history of evolving system priorities is essential to understand some of the key reasons for the System’s current social science portfolio and performance – discussed in the companion background paper –, the concerns that motivate this stripe review, and the central thrusts that guide the normative framework articulated in this paper.

The CGIAR has evolved from a small group of multidisciplinary Centers focused tightly on crop improvement research to increase the global supply of basic grains so as to reduce hunger and poverty, into a complex, global System of 15 Centers engaged in a broad portfolio of commodity, eco-regional, natural resources management (NRM) and policy-oriented research (POR). Over the course of the 1960s and early 1970s the Centers (in particular, CIMMYT and IIRRI) built an enviable reputation based on exceptionally successful work centered around plant breeding for the development and diffusion of high-yielding varieties, especially of wheat, rice and maize, especially in Asia. Social science research (SSR), most of it agricultural economics, played a central role in systems characterization, technology adoption analysis and impact assessment during that era.

With its successes in those commodities, the System’s geographic and commodity coverage perhaps inevitably broadened, embracing eco-regional centers (such as CIAT, ICARDA, ICRISAT and IITA) that moved beyond a tight focus on one or two specific commodities into broader cropping systems adapted to specific agroecologies. Centers increasingly confronted biophysical and institutional constraints to technology uptake and agroecological heterogeneity that required more nuanced and complex adaptive research. These challenges pushed the CGIAR to help pioneer farming systems research aimed at tailoring technology development to specific contexts. With confidence buoyed by its successes in Asia, the CGIAR began to make a major push on African agriculture.

A second Green Revolution in Sub-Saharan Africa did not materialize, however, bringing out the limits of efforts to improve productivity and reduce hunger and poverty through

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<sup>3</sup> For an excellent history of the early years of the CGIAR more generally, see C. Warren Baum, *Partners Against Hunger: The Consultative Group on International Agricultural Research* (Washington: World Bank, 1986). For a more recent history more focused on social research (i.e., the social sciences except economics), see Amir Kassam (2003), “An overview of social science research in the Consultative Group on International Agricultural Research,” *International Social Science Journal* 55(177): 441-462.

germplasm improvement alone. Serious policy and institutional problems in Africa were widely perceived at the time as the crucial limiting factor on productivity growth and poverty reduction.<sup>4</sup> IFPRI's entry into the System in 1979, in particular, substantially expanded the CGIAR's research aimed at identifying institutional and policies that impede technology adoption, cause inefficiencies, and constrain agricultural and rural development more broadly. Over the 1980s and early 1990s, as the social science and development policy communities increasingly came to appreciate that hunger and food insecurity had origins in limited food access as much as in insufficient food availability, donor demand for POR accelerated noticeably. Today, all Centers undertake at least some policy-oriented research; and for some, POR encompasses effectively their entire research portfolio.

At the same time, concerns about the environmental consequences of and limits to agricultural supply growth came into stark relief. Problems with chemicals and water use in those parts of Asian agriculture most affected by the CGIAR-led Green Revolution were becoming widespread and serious, and the water, soils and pest constraints to achieving stable productivity growth in rainfed African agriculture were becoming painfully evident. As a result, research on the role of natural resources in agricultural and rural development expanded rapidly over the course of the 1980s, accelerated by the System's addition of NRM-oriented Centers such as CIFOR, ICRAF, IWMI and WorldFish. Much NRM research necessarily had social science roots, focused on improving understanding of the institutional and organizational arrangements underpinning non-market resources allocation and of farmer NRM behaviors.

Over the past fifteen years, some consolidation has occurred within the System, with the merger of ILCA and ILRAD into what is now ILRI, and IFPRI's absorption of ISNAR. Meanwhile, core funding has fallen in inflation-adjusted terms as the System's broader research portfolio, especially in the social sciences, naturally elicited – and required – increased demand for its services and, consequently, steep growth in restricted funding and a corresponding relative decline in the core, unrestricted funding that most commonly generates serendipitous, dramatic discoveries of the sort that gave rise to the Green Revolution and the System's creation.

Similar pressures have led the System to place growing emphasis on partnerships across Centers through ecoregional programs, and then organized around systemwide programs (SPs) and Challenge Programs (CPs) to address more global issues. More recently, the System has placed increasing emphasis on partnerships with development practitioner groups, local communities and the private sector.

Knowledge sharing within and among Centers has always been especially important for the social scientists in the System. It has always been recognized as essential for social scientists working with natural scientists to support the conservation and development of improved animal and plant genetic material or of improved natural resources management practices. But over the past decade or so, the CGIAR has begun to place greater emphasis on knowledge sharing through external partnerships. Much of this has been driven by increased dependence on restricted research funding and growing donor demands for clear demonstration of the impact of research on productivity, poverty and the environment. As a result, partnerships have tended to focus downstream, on links to adaptive researchers, extensionists and development practitioners in national agricultural research systems

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<sup>4</sup> Perhaps the most influential expression of this diagnosis was Elliot Berg, *Accelerated Development in Sub-Saharan Africa: An Agenda for Action* (Washington: World Bank, 1981).

(NARS), non-governmental organizations (NGOs), private firms and government agencies in developing countries. Although the CGIAR plays a crucial bridging role between basic researchers in advanced research institutions (ARIs) – mostly developed country universities – and NARS, NGOs and other downstream stakeholders, far less emphasis has been placed on forging and maintaining strong partnerships with ARIs.

The CGIAR has never been – and never will be – large enough to do all agricultural research that is valuable in the world. The CGIAR needs to take care to fill in the research gaps left by profit-minded private firms or national (and sub-national) governments necessarily focused on concerns specific to their constituencies. As the CGIAR's mission has broadened and its network expanded, its research priorities have evolved and its early successes have necessarily given way to more daunting research challenges. This makes it all the more important for CGIAR social scientists to effectively bridge and leverage knowledge from other sources. Hence the need to pay careful, ongoing attention to issues of comparative advantage vis-à-vis alternative suppliers of agricultural research.

### **Where Does the CGIAR's Comparative Advantage Lie?**

A “normative framework for a high-quality and effective social science research agenda” for the CGIAR must take as its starting point a clear-eyed assessment of where the System's current or prospective comparative advantage lies with respect to social science research (SSR). Having asked scores of people this question over the past several months, the common denominator seems to have three elements.

First, (most of) the Centers' location in developing countries facilitates highly contextualized, problem-driven research that is both more difficult and more costly to undertake from ARIs based in the more developed countries. Second, a large cadre of highly-trained, internationally-recruited staff enables Centers and CPs to undertake more advanced and complex lines of research than many – but certainly not all – developing country NARS can tackle. Third, the multidisciplinary nature of most Centers and CPs and the relatively low disciplinary boundaries within them make it relatively easier to organize diverse teams well-equipped to address inherently interdisciplinary challenges beyond the reach of more narrowly staffed research institutes or faculties. This is especially true within the agricultural sciences, where the CGIAR is a major producer of new discoveries and intellectual property.

The intersection of these three attributes that confer comparative advantage on the system points clearly to a necessary focus on applied agricultural and rural research that demands both a presence in developing countries and teams of highly skilled social scientists able and willing to collaborate actively with other, non-social scientists. However, this is still a rather broad swath of intellectual territory. One might usefully think of it as an outer boundary on the social science research on which the CGIAR should focus. And drawing boundaries around the appropriate limits of CGIAR activities appears especially important now in light of widespread concerns about mission drift driven by growing dependence on short-term, restricted funding.<sup>5</sup>

The System needs to carefully exploit the collective expertise of the Centers and CPs to provide the sort of centralized overall direction recommended by the Change Management process currently underway – while exploiting both the locational advantages conferred by

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<sup>5</sup> See, for example, World Bank, *The CGIAR at 31: An Independent Meta-Evaluation of the Consultative Group on International Agricultural Research*, 3 volumes (Washington, 2003).

Centers' campuses and the flexibility afforded by a multidisciplinary mass of well-qualified scientists. The emphasis must fall squarely on topics where the CGIAR can make tangible, high-return contributions to IPGs associated with (i) sustainable agricultural productivity increases of, by and for the poor, (ii) conservation of the natural resources on which the rural poor directly or indirectly depend for crucial environmental services, especially concerning agricultural productivity, and (iii) institutional, policy and technological innovations that enhance the quality of life for poor and marginalized agrarian populations. Honoring the System's comparative advantage requires more than just identifying and emphasizing these core research themes. Equally, it requires identifying and enforcing strict boundaries on its activities so as to avoid (i) unnecessary duplication of efforts more effectively performed elsewhere, (ii) crowding out emergent research and outreach capacity in developing countries, and (iii) the high opportunity cost associated with surrendering the space necessary for serendipitous scientific discovery.

### **Social Science Research in Support of CGIAR Comparative Advantage and Mission**

As agricultural research institutions focusing on research for development, CGIAR scientific research activities must come first, outreach and training second. Of course, one needs to guard against excessive distancing of research from field-based activities. There should be functional integration of research, capacity building/training, and public outreach and advocacy to disseminate research results. Research is the engine of discovery, but outreach and training are the wheels that transfer the engine's power into forward movement. Moreover, training – e.g., of students directly involved in collaborative research projects – and outreach – e.g., in the context of authentically participatory research – are often inextricable from good research design. But, in general, resources (especially time) for research must be protected against inevitable growth in external demands for additional time spent on outreach and training, always maintaining a productive tension between the three functions in order to generate research-led impacts.

All social science research within the CGIAR should build up fundamental (basic and applied) knowledge about human and organizational behavior and experience, the root of the social sciences. This will be manifest in widespread citations of CGIAR SSR by scholars as well as enhanced impact on the ground because high quality applied research has impact both downstream and upstream. Excellence in CGIAR SSR should become manifest in increased resistance to claims of a stark tradeoff between impact on the ground and on the broader research community. The core reason is that when CGIAR social scientists begin to drop out of the cutting-edge dialogue within the global social science research community out of a concern to preserve "relevance", their ability to mobilize their most able counterparts in ARIs, NARS and the private sector wanes. This matters because the System will never have the critical mass to achieve its laudable-but-audacious goals without that critical leveraging of external science.

CGIAR social science needs to generate substantive descriptive and predictive knowledge, as well as prescriptive evidence on how to use that knowledge to induce sustainable agricultural productivity gains by, for and of the poor. This has historically been the System's first-order priority; recent global events suggest that it should remain its focus. This implies a need to understand and promote delivery and scalability of promising technological, institutional, management and policy innovations, as well as a need to undertake rigorous – albeit not always quantitative – ex ante and ex post impact

assessment. Current best practices for establishing causal effects in impact assessment rely on either carefully-designed experimentation using randomized controlled trials or the use of careful longitudinal tracking of households, individuals and communities in order to be able to control for confounding variables. Such best practices should be the bread-and-butter of CGIAR empirical research.

Somewhat more precisely, given the System's appropriate emphasis on agricultural productivity growth, social science research should emphasize support of productivity growth via technological innovation, via institutional innovation, and via agricultural and rural development policy analysis. The relation between the CGIAR's sources of comparative advantage, areas of appropriate social science research emphasis, and sample of specific lines of research activities are reflected in Appendix 1.

The first and single most important area of emphasis in social science research will focus on technological innovation. This will involve systems and farmer characterization work, participatory plant breeding, ex ante impact assessment for priority setting, technology adoption studies to establish cross-sectional and intertemporal patterns of uptake and adaptation of CGIAR innovations, and ex post impact assessment for evaluation. Research on and capacity building with respect to intellectual property rights management and policy should be appropriately recognized as an element of social sciences support of technological innovation. If emergent lines of research on innovation systems and impact pathways can be demonstrated to have impact by fostering partnerships for improved technology development and broader scale and more rapid uptake, these should be included in the portfolio as well. It is worth noting explicitly that this focal area of research can and should include NRM research essential to increasing and sustaining productivity, giving careful attention to concerns that location-specificity often sharply limits the IPG nature of NRM research. Research on productivity growth by, for and of the poor should represent a clear plurality of social science resources, outputs and impact, perhaps even a majority.

The second area of priority social science research focuses on productivity growth through institutional innovation. This encompasses investigation of market and non-market resource allocation mechanisms, including sociocultural constraints on and incentives for productivity-enhancing innovations and collective action and property rights, as well as agricultural input and output distribution systems, including farmer-based organizations. It also relates to research, training and outreach on the design and management of agricultural and NRM research institutions, whether around intellectual property rights, impact assessment methods, or related topics.

The third and final focal area would be social science research to directly inform agricultural and rural development policy. This would encompass policy analysis related to international agricultural trade, domestic and regional agricultural input and output markets, intellectual property rights and agricultural research policy, and the policies for the conservation of animal and plant genetic resources. The CGIAR occupies a rare and important space in the universe of policy analysis suppliers due to its combination of international-caliber technical expertise and its multinational nature. These characteristics induce a widespread perception of a more objective, "honest broker" source of policy guidance than might come from (especially government-funded) ARIs or NARS, or more politically-driven international organizations.

The CGIAR needs to be very careful about drift into other areas of social science, especially broader development studies and policy analysis (e.g., more general poverty

analysis, trade modeling apart from agriculture, etc.), for which there is constant, even growing demand. While CGIAR social scientists have the skills to undertake such work, the opportunity costs are high as other ARIs and international organizations (e.g., the World Bank) typically hold comparative advantage in these broader topics. Similarly, the CGIAR needs to guard against mission drift into degree-based and some types of non-degree training for which it holds no comparative advantage, lacking a pedagogical mission, history and infrastructure. Given the steady decline of tertiary education in many low-income countries, the demand for such services is great. But the opportunity costs of CGIAR social scientists time diverted from other, higher return activities, as well as the risk of displacement of latent local providers of such training services, are typically considerable.

### **Desired Outputs**

The products of social science activities can be coarsely categorized based on two distinct audiences: decision-makers within the CGIAR (both non-social scientists and research managers), and external audiences in civil society, governments, donor organizations, NGOs and the for-profit private sector.

Within the System, social science should once again play a central role in priority setting, from System-level down to individual research team levels. This should emerge from rigorous research based on multiple methods (e.g., simulation modeling, participatory assessments, etc.), where appropriate and feasible, to establish the likely impacts of successes in different lines of research as well as the likelihood of success in a given line of research. This will influence the international agricultural research community more broadly, shaping not only the direction of CGIAR research, but that of the ARI and NARS research as well. Historically, IFPRI has provided much of this guidance at System level, in recent years commonly through applications of the IMPACT model. The System should have some inter-Center, interdisciplinary team tasked with monitoring the “big picture”, identifying changes in high-impact research opportunities, the competitive landscape, etc. so as to help Centers, CPs and the System use scarce resources for greatest effect. Within each Center or CP, systems characterization, farmer participatory research and ex ante impact assessment are standard tools for priority setting and are – and should likewise be – employed routinely, with some unit tasked to provide leadership within the Center or CP in these priority-setting or targeting efforts for research managers.

External stakeholder audiences draw on a variety of CGIAR SSR products. Chief among these are peer-reviewed publications, which are the natural and desirable outgrowth of good research and quality control. The rationale behind CGIAR social scientists writing for peer review is not to trade in the currency of ARIs, but rather to employ the international peer review process to do low-cost quality control of CGIAR SSR that feeds into high stakes investments by Centers, CPs and their stakeholders in technology and institutional development and in policy design and evaluation. With the proliferation of international, peer-reviewed journals, the large majority of CGIAR social science research should lead directly to peer-reviewed publications. Failure to do so typically indicates an absence of systematic quality control at a minimum level.

There will always be a quality-quantity tradeoff in publications. Scientists should always be aiming to publish their findings in widely read and well-respected journals. This will not always mean the very top disciplinary journals, which may be inappropriate or inaccessible to the largely applied work of CGIAR social scientists. Moreover, in the Internet era, the



exact outlet is becoming somewhat less important to dissemination as search engines replace publishers as the dominant packagers of the information that results from research. The primary value of peer review lies in that system's quality control services – with the quality control standards typically strong correlated with journal stature – and only secondarily in the international distribution network provided by internationally recognized journals.

The financial model underpinning SSR within the CGIAR necessarily affects the nature of its outputs. In particular, the greater the System's dependence on short-term, restricted funding, the more its social scientists inevitably trade off quality and long-term impact for timeliness and short-term measures of impact.<sup>6</sup> This too easily leads to a low-level equilibrium in which excessive reliance on short-term contract research leads to weaker research, which in turn undermines the case for core, unrestricted funding, reinforcing the problem. It takes strong research leadership in the Centers – e.g., to be selective about funding sources and vigorous in defending scientists' time for higher-return, longer-term research threads – to establish and maintain a culture of high quality research for peer-reviewed publication.

Publications are most certainly not the only outputs of value. One important source of comparative advantage of Centers is their long-term presence in key agroecosystems, permitting collection of high quality longitudinal data essential to understanding the dynamics of rural communities and the impacts of institutional and technological change on specific subpopulations, and to informing the design of new policies and technologies and the prioritization of different prospective investments. High quality, readily-available data generated external to political systems controlled by governments is also essential to guide multinational decision-making.

Data must be collected following the highest international standards. Small-scale, hastily designed and poorly supervised data collection exercises must be actively discouraged as ineffective uses of scarce resources. Historically, the System has collected too much data and done too little analysis of the data it collects. Once again, this often derives from the pressures associated with short-term, restricted research funding. In order to better exploit the data collected by or with the CGIAR, all data should be publicly released with a minimal lag of probably no more than one year, a window sufficient to preserve appropriate priority of access to those who invested energy in collecting the data. Data must be posted electronically with full and clear documentation in order that the broader scientific community can fully exploit the potential in the data. Data repositories for meta-data and would economize on search and prevent unnecessary duplication of efforts. Few institutions do this well today; the CGIAR can and should set the global standard. In order to do this, the collection of valuable, high quality data must be clearly recognized and rewarded within the System, at the level of individual scientists and at Center and CP level.

Similarly, Centers and CPs must occasionally produce software, patents and other research outputs of value beyond publications and data sets. CGIAR output must always include training and capacity building activities, especially for weaker NARS and for exposing leading young scientists to the intellectually challenging and socially important research problems that are the CGIAR's focus. Centers' trainees are a primary source of their future

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<sup>6</sup> For more on this, see James G. Ryan and James L. Garrett, *The Impact of Economic Policy Research: Lessons on Attribution and Evaluation from IFPRI*. IFPRI Impact Assessment Discussion Paper no. 20 (Washington, 2003).

scientific staff. Global and regional policy outreach and advocacy work is likewise a natural outgrowth of high quality research and a critical means to establish and sustain demand for research for agricultural and rural development.

### **Desired Impacts**

CGIAR social science needs not only to produce useful new knowledge; it needs to promote uptake of that knowledge so as to effect change and achieve impact consistent with the System Mission. The most important direct impact thus stems from contributions to productivity growth and livelihood enhancements by, for and of the poor. Such impacts need not be confined to primary production, but can and should extend throughout the entire value chain, from plot to table, encompassing not just the capture of additional producer surplus, but added consumer surplus – with respect to both consumer goods and intermediate inputs – as well.

Impacts through indirect pathways are equally critical, albeit far harder to measure. Some of these will come through the influence of institutional and policy analysis as an input to decisions made by stakeholders external to the CGIAR. Key change agents should be able and willing to identify CGIAR inputs as important to successes achieved.

A second indirect pathway flows through the impact of System social science on scholarship more broadly. CGIAR research and the broader activities CGIAR social scientists catalyze should influence the direction of social science research globally, at a minimum within those subfields focused on international agricultural development. In particular, CGIAR social sciences should continue to build and communicate the conceptual logic and empirical evidence base for restored long-term investment in environmentally sustainable agricultural productivity growth. Given its unique position, the CGIAR should develop and disseminate many of the theoretical and methodological tools necessary for state-of-the-art research in international agricultural and rural development. The multiplier effect attainable by shaping the direction of global research related to international agricultural and rural development, the vast majority of which occurs outside the CGIAR, is potentially enormous. As but one example, the CGIAR's influence in the high-profile Copenhagen Consensus assessment of the highest priority global research priorities (especially on hunger and malnutrition and on water) has had a profound – but exceedingly hard to quantify – impact that must not be underestimated.

### **Organization**

Form follows function. With the previously-identified areas of comparative advantage and emphasis, as well as desired outputs and impacts, the question now turns to how best to organize and staff CGIAR social science activities so as to achieve those intended results.

#### *External Partnerships*

As has become increasingly widely appreciated, the CGIAR needs partnerships models to effectively leverage external resources and skills, especially those needed regularly but infrequently by Centers. There exist multiple distinct partnership types.

Many Centers have developed extensive, effective partnerships downstream to technology delivery agents, such as community-based organizations, international and local NGOs and NARS essential to stimulating uptake of the technologies and ideas generated by CGIAR scientists, and thus to near-term impacts. Identifying effective downstream partners

and helping to build their capacity – not least of which to engage farmers in technology and institution development research activities from the outset – should be prerequisite so that Centers and CPs do not get pulled into local-level extension and development activities that are not the System’s comparative advantage while also not abandoning the need to remain closely tied to prospective end-users of CGIAR research. This underscores the need to build and maintain productive, mutually-beneficial collaborations with local development research and practitioner communities in developing countries, both to enhance capacity building and maintenance in those communities and to ensure appropriate relevance and dissemination of CGIAR research findings.

Equally importantly, CGIAR social science needs to devise effective modalities for upstream partnerships, to the ARIs that hold comparative advantage in more basic research. This is terribly important for multiple reasons. First, and most obviously, the CGIAR can cost-effectively leverage the best minds in the world if it can establish effective mechanisms for engaging leading ARI social scientists in substantive collaborations with Centers and CPs. Second, just as the System needs to avoid getting pulled into too local activities in which it does not hold comparative advantage, so must it avoid getting drawn too far into basic science in which it likewise holds no comparative advantage. Striking that balance is a constant challenge. Strong partnerships in both directions are an effective means to buffer the System, and individual Centers and intra-Center research programs, against excessive drift in either the up- or down-stream direction. Third, since the CGIAR is a tiny share of global agricultural research,<sup>7</sup> there are potentially great multiplier effects attainable from influencing the upstream, basic research that permeates virtually all global agricultural research, not just the small universe occupied by the CGIAR and its immediate downstream partners. These indirect impacts will almost surely occur with longer lags and be more difficult to measure than conventional, direct, shorter-term impacts on which the system has long focused. But since it is common that indirect effects dwarf direct ones in generating impact,<sup>8</sup> it is not at all self-evident that greater investment in upstream partnerships comes at any cost in terms of long-term impact.

External partnerships to mobilize ARI social science seem to need further attention. Some Centers have experimented with Associates programs in which individual ARI scientists have an affiliation with (and compensation from) the Center without being directly embedded in a specific program of research with strong collaborative ties to Center staff. That model does not seem to have proved very effective. Other Centers have or are experimenting with deeper collaborative relationships with institutions, leveraging senior ARI scientists’ time in flexible arrangements that allow for in-depth partnering with multiple Center scientists around broader research themes, not just specific projects with restricted

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<sup>7</sup> In 2000, the CGIAR represented just 0.9 percent of all spending on agricultural research worldwide; it even represented only 1.5 percent of all publicly-funded agricultural research. See Philip Pardey, Jennifer James, Julian Alston, Stanley Wood, Bonwoo Koo, Eran Binenbaum, Terrance Hurley and Paul Glewwe, *Science, Technology and Skills* (St. Paul, MN: International Science & Technology Practice & Policy Center, 2007).

<sup>8</sup> By way of analogy, an empirical regularity in the economics of agricultural development is that adverse agricultural production and investment incentive effects that arise indirectly due to national-level macro policy (e.g., exchange rates, trade, etc.) swamp the favorable effects of direct, agricultural sector policies (e.g., R&D, rural infrastructure, input subsidies, etc.). For the original, seminal work on this, see Anne O. Krueger, Maurice Schiff and Alberto Valdes (1988), “Agricultural Incentives in Developing Countries: Measuring the Effect of Sectoral and Economywide Policies,” *World Bank Economic Review* 2(3): 255-271. The World Bank has recently updated that work with similar, but as-yet-unpublished, findings.

funding. This introduces added mentoring and scientific rigor without making long-term commitments of Center resources necessary for hiring skilled senior staff. In general, strong and durable ARI partnerships are uncommon in the social sciences in the CGIAR today and need renewed emphasis in order to upgrade and maintain the quality of CGIAR SSR.

Another form of oft-overlooked partnerships are horizontal links to other international organizations working on related activities (e.g., the United Nations agencies) and to larger NARS that rival or exceed Centers' capacity. The System needs to make good use of these potential partnerships, both to help remain focused on IPG generation and to avoid drift into areas of important research that are nonetheless outside the System's core competency set.

Centers' comparative advantage in the international research community derives from their location in developing countries and the interdisciplinary staff they employ. So long as the quality of the science is sufficiently strong, the System can – indeed, must – use these to attract ARI and international organization partners who value those attributes and who can bring higher-end research toolkits, greater access to global decision-makers, or both.

#### *Internal Organization of Social Science Activities*

Presently, the System has one very large SS Center (IFPRI), a small number of Centers with modest sized SSR teams (e.g., ILRI, ICRAF) and a majority of Centers lacking critical mass necessary to establish and maintain high quality research programs that achieve impact. The current allocation of scarce SS resources within the System does not seem optimal.

The system is currently moving towards more centralized organization, with some core funding guaranteed to each Center for a multi-year period, but with the major flow of funds allocated to system-wide mega-programs that address the major strategic issues of the day (e.g., food staple productivity, climate change). At the same time, the system is forming a consortium of Centers and CPs that could reduce System-level transactions costs. Scale advantages, not least of which in being able to afford investments in longer-term, riskier and less site-specific research activities that should be the CGIAR's comparative advantage.

This broader Change Management process will obviously heavily affect the organization of SS activities over the coming few years. With pooled funding around strategic programs scientists should have greater independence from individual donors' short-term interests than is presently the case. The change management processes recognizes that reliance on short-term, restricted funding projects seems to heavily distort the System and compromise research quality.

Critical mass is especially important to achieving economies of scale in research support (e.g., design and maintenance of meta-data repositories, web sites, etc., electronic libraries, GIS support, software access, etc.) and collaborative synergies. The System at present has insufficient non-economics social scientists dispersed too broadly throughout the System to build the synergies necessary to achieve regular, significant impact. CGIAR social scientists must establish and maintain a culture of excellence with frequent, substantive feedback and collaborations throughout the group. Institutional culture co-evolves with the organization of and incentives for research and associated activities. The System must be attentive to cultural drift and promptly identify and vigorously implement appropriate corrections.

### *Funding models*

Many of the changes one might want to see in CGIAR SSR depend fundamentally on a return to a more stable, less restrictive funding model—a major objective of the Change Management process. At a minimum, one would want to establish and protect stable core funding covering 2/3-3/4 of permanent social science staff costs, supplemented by restricted funding that builds on the core research program, allowing hiring of temporary support staff and to draw in external collaborators for specific tasks and activities. When restricted funding gets too big, it leads to drift (in search of funding), it rushes research, leading to premature conclusions and insufficient analysis and dissemination that lead to errors (and adverse rather than positive impacts), and distorts staffing patterns and performance evaluation metrics (which then tend to focus on grantsmanship excessively, at the expense of research quality). Funding should be viewed as an input into high quality research, not an end in itself.

### *Staffing*

As discussed previously, one essential source of comparative advantage for the CGIAR is – or at least should be – the quality of its (especially internationally recruited) staff. Maintaining international excellence requires vigorous efforts to recruit and retain first-rate social scientists.

The keys to maintaining a high quality cadre of social scientists in the System are two. First, compensation packages and professional satisfaction from the work environment must be competitive with leading ARIs and international organizations around the world. The System needs to recruit more aggressively and earlier through collaborations with the Ph.D.-granting ARIs that produce future CGIAR staff. Since the demise of the former Rockefeller Foundation post-doctoral researcher program, there is no comparable highly-regarded, high-profile recruitment mechanism for social scientists into the CGIAR, with adverse consequences for the quality of new hires. New mechanisms will be established to address this disadvantage.

Professional satisfaction is also a big issue. The System must adhere to current best practices in addressing human resources concerns, especially related to family leave, dual career concerns, and other issues that are increasingly central to competitive recruitment and retention of female scientists. Travel demands on staff must also be compatible with work-life balance without compromising essential connectivity with partners in distant locations and the relevance of activities to practical challenges faced by rural communities. This requires enhanced security of funding so that scientists need not become itinerant consultants, as well as more creative use of rapidly-advancing information and communications technologies.

Second, in order to stay sharp, scientists need ongoing mentoring, continuing education, training and evaluation to set and enforce individual and collective performance standards. Given the complex nature of the problems on which CGIAR social scientists work and the team-oriented organization of most research projects, rewards must be based on both individual and collective performance. This requires information systems for standardized monitoring of expenditures and effort allocation within the System, not only within Centers and CPs, as well as of outputs and impact so that managers at all levels, from a program within a Center to the System as a whole, can readily assess performance. Such systems are commonplace in contemporary ARIs but are woefully inadequate in the CGIAR today.

Scientists must remain active within their relevant disciplinary professional associations so as to keep current on advances in theory, methods and empirical evidence. All internationally recruited staff should be subject to regular (say, every five or six years) external peer review of their individual activities. External peer reviewers should include ARI scientists able to evaluate the quality of research, NARS and development organization staff able to speak to the relevance and practical impact of a staff member's activities, and CGIAR scientists able to evaluate both. And staff must be given occasional opportunities for training and retraining, through short courses, mini-sabbaticals, etc. in order to update their technical toolkits.

The System should exhibit the classic, diamond-shaped demographic structure in its staffing, with the bulk in the experienced middle range of prime research productivity years, 6-20 years past their Ph.D. Recruitment of new Ph.D.s and junior post-docs should take place largely as necessary to replace retiring or departing senior staff or to top up research teams on multi-year projects. Internationally recruited junior scientists should comprise no more than one-quarter of total internationally recruited staff. Competitive retention packages and short, sabbatical-style programs for skills updating and consolidation of knowledge will be essential to maintaining the productivity of mid-level scientists. Without such efforts, ARIs and international organizations will consistently skim off the best performers, leaving the CGIAR with a cadre of mediocre mid-level scientists, thereby sharply constraining the System's research potential.

Expectations of young scientists (roughly, those in their first five years post-PhD) should be limited to research productivity, training and outreach. This cohort should not be expected to generate significant external funding. They have the most current toolkits, based on the most recent training, and are still consolidating their command of those tools. Let them focus on establishing a high quality research program and mastering the science necessary in the CGIAR – which differs from that in the ARIs where they trained – leaving fundraising to research managers and administrators. Rewards must be based not just on publications or grantsmanship, but more directly on the production of IPGs, which can include valuable publicly-available data, training modules, etc.

Staff composition is likewise critical. Disciplinary diversity for its own sake is a waste of resources. The point of disciplinary diversity is to marshal an appropriate range of rigorous methods so as to provide the most accurate possible assessment of behavior and impact relevant to the problem the team aims to tackle. Different phenomena are amenable to measurement through different methods. High quality research on the complex topics that define many System priorities requires multiple perspectives. But in order for scientists to remain at the top of their game, they also need a critical mass of disciplinary peers to whom they can turn for guidance and support, and who can provide routine constructive criticism on the necessarily challenging SSR topics faced by CGIAR scientists.

The System has long been economics-heavy and economics probably remains the single most useful disciplinary toolkit in CGIAR social science. But the paucity of non-economists within the System with rigorous research toolkits and the demonstrated ability and willingness to work with economists and biophysical scientists sharply limits the research capacity of the System. While advanced degree training in a social science discipline should not be an absolute prerequisite for undertaking social science research, Centers and CPs need to guard against the assignment or drift of underperforming natural scientists into social science groups as a fallback position, as has been known to happen too frequently.

The non-disciplinary diversity of staff – by gender, nationality, etc. – is also important to a healthy variety of perspectives and skills and to maintaining the CGIAR’s hard-won reputation as an “honest broker” in global policy debates. Historically, the System has been far better at this than most ARIs or NARS. But there is constantly room for improvement, especially with respect to the recruitment, retention and promotion of female scientists.

### **Conclusions**

This brief normative framework for social science activities in the CGIAR is neither comprehensive in its details nor should it be static. It is meant solely as a jumping off point for a serious discussion of how the CGIAR can be best served by the social sciences in advancing its mission and vision. This framework should evolve, starting with dialogue within the Science Council and then between the stripe review panel and the Center and CP focal persons at the very beginning of phase 2 of the review. Moreover, although it has been informed by the evidence-rich background study that is the companion to this document, the framework is clearly still predicated on assumptions that must be subjected to careful empirical scrutiny. And it will be heavily affected by prospective broader-scale changes associated with the Independent Review of the System and with the Change Management Initiative. But as point of departure, the hope is that this framework effectively lays out a range of principles and desired states against which the current situation can be benchmarked and towards which recommendations in phase 2 can be oriented.

**Appendix 1: Areas of CGIAR Comparative Advantage, Derivative Social Science Research Foci and Specific Lines of Research Activities**

CGIAR Comparative Advantage	CGIAR Social Science Research Focus	Specific Lines of Research Activities
<p>Multidisciplinary research on agricultural productivity growth by, for and of the poor.</p> <p>Close interaction with stakeholders at local, national and global levels.</p> <p>Producer of significant new intellectual property in agricultural sciences.</p>	<p>Productivity growth and poverty reduction via technological innovation.</p>	<ul style="list-style-type: none"> <li>• Systems and farmer characterization work</li> <li>• Participatory plant breeding</li> <li>• Ex ante impact assessment for priority setting</li> <li>• Technology adoption studies to establish cross-sectional and intertemporal patterns of uptake and adaptation of CGIAR innovations</li> <li>• Ex post impact assessment for evaluation</li> <li>• Natural resources management (NRM) for enhancing and sustaining productivity growth</li> <li>• Emergent research on innovation systems and impact pathways</li> <li>• Intellectual property rights management</li> </ul>
<p>Close interaction with stakeholders at local, national and global levels.</p>	<p>Productivity growth and poverty reduction through institutional innovation.</p>	<ul style="list-style-type: none"> <li>• Investigation of market and non-market resource allocation mechanisms</li> <li>• Sociocultural constraints on and incentives for productivity-enhancing innovations</li> <li>• Collective action and property rights</li> <li>• Agricultural input and output distribution systems, including farmer-based organizations</li> <li>• The design and management of agricultural and NRM research institutions, whether around intellectual property rights, impact assessment methods, or related topics</li> </ul>
<p>Unique combination of international-caliber technical expertise and its multinational nature.</p> <p>Widespread “honest broker” perception for policy guidance.</p>	<p>Productivity growth and poverty reduction and by directly informing agricultural and rural development policy.</p>	<ul style="list-style-type: none"> <li>• Policy analysis related to international agricultural trade, domestic and regional agricultural input and output markets</li> <li>• Intellectual property rights and agricultural research policy, and the policies for the conservation of animal and plant genetic resources</li> </ul>