

Day Three: What do we need to do better? Strengthening the impact of agricultural research in development

GCARD Daily News presents a few highlights of each day. GCARD seeks to begin a transformation in agricultural research to meet the enormous challenges of doubling the food supply over the next 40 years and doing so in ways that are environmentally sustainable.

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QUOTABLES

"We need to stop talking about linking to farmers and start talking about involving farmers." -Kwesi Atta-Krah, Biodiversity International

"We grow rain-fed crops. If it doesn't rain, there will be hunger." -Lydia Sasu, Farmers Organisation Network, Ghana

"Partnerships are not the same as contracts. They are about more than money." -Marco Ferroni, Syngenta Foundation

"Wherever there are women, there is more enthusiasm and excitement." -Esther Penunia, Secretary General of the Asian Farmer's Association.

Research Themes Identified for International Agricultural Research

Dr. Mark Holderness, Executive Secretary of GFAR, opened Day 3 of the conference by calling upon the participants for decisive collection action: "We've set the theme over the last two days. I can see you are all fired up to do something; now is your chance."

Dr. Mahmoud Solh, Director General of ICARDA, affirmed the need for feedback from stakeholders to develop the CGIAR mega-programmes based on demand, not supply. "It has been a long journey, but now we must focus on where we go next," he said.

Eight parallel sessions, outlined below, mapped proposed thematic areas for the large-scale CGIAR collective action programmes.

Agricultural Systems for the Poor and Vulnerable

Around 70 participants attended a session moderated by Dr. Maarten van Ginkel, Deputy Director General of Research at ICARDA, on the agro-ecosystem research area, one of the 8 suggested thematic areas of the CGIAR.

The approach and geographical dimension "dictates the needs by itself and avoids requiring us to dictate the needs," said Hartmann, Director General of IITA. Several participants highlighted the need for new partners to bring in the social skills and knowledge required to fulfill the agenda.

Group discussions addressed questions aimed at fine-tuning the research area focus, required partnerships, desirable outcomes, and ways to achieve higher women involvement, among others. While many participants expressed enthusiasm for this area of research, some also wondered if the impacts of the mega-programme wouldn't duplicate efforts of other proposed areas.

Enabling Agricultural Incomes for the Poor

Mark Rosegrant of IFPRI briefed session participants on the policy and institutional constraints and opportunities, and the CGIAR's proposed thematic research focus, to support farm incomes for the poor.

"Agricultural growth has a bigger impact on poverty reduction than other sectors," said Rosegrant.

Specific research areas focused on identifying policy biases that negatively affect the poor and women, including public spending, taxation, trade, and regulation. The research theme would also focus on investments in local public goods, promoting growth in agricultural and rural development, and service sectors.

"Working with plant or soil scientists at the international and national level allows us to cut across broad areas in ways that others couldn't do," he added.

The absence of a platform that links the various actors along the research-development-policy continuum from the bottom up was identified as a key challenge.

Participants noted that it was important for research to determine which beneficiaries it hoped to target on the micro-level, and to address key constraints that negatively affect farmer incomes, such as post-harvest losses, and proper training to ensure farmers are able to maximize their productive capacity.

Optimizing Productivity of Global Security Crops

Explaining why this parallel session was exclusively focused on rice, maize and wheat, Marianne Banzinger of CIMMYT said that it was important to move quickly to study the anticipated gap between yield and demand, which the world will face long before 2050, and that this big challenge required coordinated investment and partnerships.

"If we want food prices for these three crops to remain stable, the productivity on farms has to go up on essentially the same land area, with less water, nutrients, fossil fuel and labor."

Participants were quick to point out that the CGIAR must include other essential good security crops in their analysis, particularly given that there is no specific food security theme within the CG centers.

They also noted the importance of defining roles within the system. One participant summed it up neatly, saying that without a clear division of labor "the CGIAR will be invited to work on everything and not deliver on anything."

Agriculture, Nutrition and Health

In a session moderated by Dr. Mark Cackler of the World Bank, participants in the agriculture, nutrition, and health program session noted the importance of fruits and vegetables for diversified diets against a backdrop of the rising obesity epidemic in poor countries. To achieve this, they noted synergies with the program on crop diversity and bringing back underutilized or orphan crops and using openly pollinated varieties. They also discussed the critical importance of gender and childhood nutrition in this programmatic area, the quickly urbanizing population with associated diet changes, and food safety such as the health risks posed by aflatoxins. They discussed the need to build on past science, but also to broaden the focus from crop research and biological sciences to the social sciences.

"We need to start accepting the fact that science has not done a very good job of improving nutritional health," said Benedikt Haerlin of the Foundation on Future Farming. "We need to really humble ourselves with regard to traditional knowledge, habits, and traditions."

"The very good traditional food system in Africa has been completely changed because of globalization," said Assetou Kanoute of ADAF-Galle. "We have to make sure any mega-programme on this topic takes into account what was there before and builds on that."

Other participants noted the importance of partnerships and capacity building to fill in the gaps of the CGIAR, which is primarily a research-based organization, and the concrete outcomes that could be achieved with these partnerships. All of this will require advocacy and education campaigns.

Water, Soils and Ecosystems

The agricultural research community plays a central role in finding solutions to the interlinked challenges of water scarcity and land degradation. Some 200 million farmers' livelihoods could be improved across Africa and South Asia through water harvesting, soil and water conservation, water lifting, watershed management, storage, and increased water productivity.

According to Dr. David Molden of IWMI and moderator of the session, integration across scales and beyond crops is needed to find new ways of producing more from less water and land resources. Dr. Molden also pointed to rainfed lands as the largest opportunity to reduce poverty and improve land and water productivity.

Availability and quality of water will be the main pressures and issues on societies and environment under climate change. "If we are thinking of climate change adaptation, it has to be around water," Molden said.

Participants raised several other priorities for the proposed thematic area, including: more attention to urbanization versus rural development scenarios; adding nutrient productivity; overexploitation of water beyond superficial water; bringing more attention to the quality (versus quantity) aspect of water in agriculture; opportunities for groundwater and wastewater; accessibility to improved inputs; and the relationship between irrigation and energy.

In response to concerns about a piecemeal approach, Dr. Dennis Garrity, Director General of ICRAF, added that "work on water, land and soil will be done in other mega-programmes as well. This area has a lot to do with the methodological development of land, health assessment, and soil fertility, and we intend to take a more strategic approach to development of these methods and their application at scale."

Climate Change, Agriculture and Food Security

Smallholder farmers in developing countries are on the front lines of climate change, and often have to bear the brunt of its impact. Bruce Campbell, Director of the CGIAR Challenge Program on Climate Change (CCAFC), kicked off the session with an overview of the proposed climate change mega-programme. Climate change and food security are the greatest challenges we face in the coming years, Campbell said, quoting an IFPRI report which forecasts that "unchecked climate change will result in a 20 percent increase in child malnutrition by 2050."

"It is vital to twin the climate change and agriculture agendas, and adapt agriculture to the new climate reality," he said. Partners should be implicated in the outset of the project to widen the scope beyond traditional actors. "We would like to engage stakeholders in a real positive process, in a real positive view of the future," said Campbell.

Campbell asked the audience for ideas on how to improve, remove and refocus the content of the programme. Several priorities were singled out: the advantage of linking with the climate, science and health communities to increase funding for agricultural research; not "reinventing the wheel" but rather drawing from the rich bank of existing good work, analyses, available initiatives and indigenous knowledge; embracing and moving beyond the farmer-science research model; and emphasizing context-specific research to inform decision-making within all levels.

Campbell also underlined the need to look at mitigation in a broader context: "We cannot look at mitigation for mitigation's sake. We have to see where there are synergies between the mitigation and adaptation possibilities."

Agricultural Biodiversity

This was a lively, interactive session where discussion ranged widely across many issues: including the need to bring all stakeholders into managing biodiversity, the importance of raising public awareness via the media to engage the public in that management, and the significance of advocacy in addressing policy-making on these issues.

Focus should remain on research and ensuring it reaches the end user, suggested one participant. "Is this a mega-programme or a giga-programme?" asked Denis Blight of The Crawford Fund. "If you try to incorporate every brick into the architecture, you will never build anything."

Participants agreed that knowledge sharing was a vital piece of the puzzle – leveraging an interactive global information system so that agricultural biodiversity actors could share findings and draw on a wide pool of research. Capacity building, as always, was a dominant theme, in the context of maintaining and managing gene banks, as well as local research centre governance.

What needs to change for agricultural research and extension systems to be more effective agents of development?

Parallel sessions addressed systematic/strategic reform needs, action plan and framework components generated from the 2009 GCARD consultations. Discussion of key strategic needs across systems included:

Improving Partnerships

Ajay Vashee of IFAP opened the partnerships session, stating that, "you cannot improve what you do not believe in and you cannot improve what you do not measure."

For Dr. Gebisa Ejeta, partnerships start with a "sense of humility and commitment." He added, "the best way to manage partnerships is to put a big chunk of the responsibility in the recipient, and have country-led initiatives."

Sophia Drewnowski of the World Bank emphasized the need for communities of practice to allow cross fertilization and a focus on improving current partnerships instead of just doing more and more. Dr. Lawrence Haddad of the UK Institute of Development Studies renewed important examples highlighting cases where participation by farmers leads to better impacts, and used examples of projects that build demand for better participation and provide the valuable "how."

The private sector group suggested that they should try to influence the thinking about development needs in terms of business case possibilities for all stakeholders involved. Participants noted that farmers could facilitate partnerships where resources are equally distributed, and farmers should be included in all the stages of the research and development cycle and take into account their competencies.

Addressing Gender for Inclusive Development

Gender is a hot button issue at GCARD and the session on gender for inclusive development was no exception – a lively mix of videos, panel discussions and interactive nodes to map out practical ways to promote gender equality in agricultural research for development.

"Wherever there are women, there is more enthusiasm and excitement," said Esther Penunia, Secretary General of the Asian Farmer's Association. Moderated by Global Author Jules Pretty, discussion focused on the big challenges facing women farmers and researchers, and optimism about women's empowerment was palpable. "We cannot address poverty in Africa and South Asia without addressing gender in agriculture," said Ruth Meinzen-Dick of IFPRI.

Solutions such as nutrition education, affirmative action in training programmes, and income investment education were all identified as ways to widen gender equality in AR4D. Successes in participatory research were highlighted, as well as the need to strengthen and innovate processes that bring women to AR4D, and encourage them to stay in the field.

A highlight of the session was a compelling video which told success stories of three women scientists selected for the AWARD Mentor Programme. The video illustrated the critical need for gender-awareness to move to the next level of gender-transformative empowerment, which quickly became a main theme and goal of the session. Mary Njenga, a PhD student at the University of Nairobi gave a presentation on a concrete example of a small enterprise giving women decision-making roles as producers of an alternative to fuelwood that is stimulating the local economy in a sustainable way.

Pamela Anderson, Director General of CIP, was one of the participants who insisted that mega-programmes without gender platforms should be denied funding. "We're at a point where gender is non-negotiable," she said, adding that the CG centers and institutions in general must fast-track gender equality policy so that it becomes a driving force guiding all mega-programmes.

Capacity Development

A parallel session on capacity development took a hard look at research investment trends and returns in order to identify the challenges in capacity building in agriculture for the future.

Dr. Nienke Beintema of ASTIA said that different countries have different financial and human capacities in public agricultural R&D. Additional investments are urgently needed for human capacity building at universities and R&D agencies to redress the declining researcher capacity, resulting from aging and brain drain.

A presentation by Dr. Philip G. Pardey of the University of Minnesota provided evidence that research lags are much longer than originally thought; for example, early work on hybrid corn started in the 1870's, but the first commercial release came out in 1933. He also pointed to the mobility of agriculture as a "moving target" that must be taken into account when thinking about technology targeting and implied agricultural R&D investment choices.

"We are paying the productivity consequences of several decades of slowing growth in productivity oriented agricultural R&D," Pardey said.

Role of the Fast-Growing Economies as New Partners

The immense potential of Brazil, Russia, India, China and South Africa (BRICS) to provide aid, guidance, and support to the developing world has not yet been reached, according to the Global Author Report (GAT) and discussed by participants at this session.

"I'm very happy that the emerging economies are taking AR4D into consideration," said Guy Riba, Vice President of INRA.

This is indeed the sentiment of many international agricultural players, as their experience stretches far and wide into the many various facets of the agriculture research for development paradigm, and can provide guidance and support to much of the developing world.

Dr. Pedro Arraes Pereira, President of EMBRAPA, articulated the strengths his country could leverage when pairing up with developing partners. In the areas of public/private partnerships, Brazil has experienced much success, as well as developing competitive processes for research funding and biotechnology in diverse climates and geographical areas. EMBRAPA representatives proposed to have senior people head up their partnered activities and programs in developing countries.

India's major strengths in genomics were identified, as well as cooperation in capacity building and human resource development; partnerships in trans-boundary disease monitoring, and management biodiversity of crops.

Widely recognized as a technology powerhouse, China plays many additional roles to target agricultural research priorities. Dr. Huajun Tang, President of CAAS, believes that China could most contribute in combating trans-boundary diseases, farming and systems management, biotechnology, and the development of hybrid rice.

While included in consultations leading up to GCARD 2010, the countries of South Africa and Russia were not able to make it to this session, but they were present and contributed at the pre-meeting held in Beijing, China earlier this year.

Knowledge, Information and Advice in Agri-Food Systems; Opportunities and Actions

Participants noted that open access to public research provides greater returns and increases the potential for spillover benefits to support global AR4D investments. Enhanced access is essential to effective decision-making and stakeholder empowerment across the AR4D spectrum.

"Research organizations, including the CGIAR, should not be satisfied just with producing high quality science," noted Enrica Porcari of the CGIAR's ICT-KM. "It is essential that research outputs are communicated and put to use, in the village, on the ground, in the lab, or across the negotiating table."

Lack of skills and access to finance and technology were highlighted as constraints to accessing research outputs. Local and global efforts to promote broader access to farm information are also hindered by under-investment and a lack of diverse approaches to information and knowledge sharing systems.

In terms of successes, national advisory services in India and other countries were highlighted. Scaling up was identified as a challenge.

Multi-disciplinary and social media-based advisory approaches that support "communities of practice" were also highlighted for their potential benefits. For example, young US farmers are using YouTube for farm advice. To build on these successes, scientists will need incentives to encourage them to contribute information on the Internet and via other means.

Thinking Forward: Better Predicting and Addressing Future Needs

This session, chaired by President of Agropolis International Dr. Bernard Hubert, provided participants with the most recent “forward looking” research for world agriculture, including the IAASTD and the 2008 World Development Report (WDR). Respondents from the GFAR regional fora commented on the convergent and divergent views of the steering committee research prepared for the session.

“We need thorough forecast analyses, as what we may agree on today may not be relevant for tomorrow or in five years time,” said Ralph von Kaufmann, presenting the response from the FARA region.

There was consensus at the session on the relevance of future looking exercises—including foresights, projections, and assessments—to help guide research strategies in agriculture in spite of the fact that many issues may remain controversial both in terms of substance and methods.

“There must be a dialogue which is participatory and includes many world views,” said Michel Petit of CIHEAM.

The participants then discussed how to orchestrate more such future-looking research exercises. “In order to have a diversity of research options available—for small holder farming, for a diversity of regions, for climate change, we have to start now to develop the diversity of models of AR4D we need,” said Hubert.

Better Benefiting the Poor through Private Sector Innovation and Actions

Chaired by Lindiwe Sibanda of FARNPAN and Joyce Cacho of Novus Int., the session covered a myriad of issues and perspectives, including: clarity in identifying and addressing the problem; careful choice of partners; explanation on how and when the poor will benefit; the importance of indicators; simplicity of the model; transparency of the model so that no one partner uses the other; the necessity of having a market; capacity development; as well as commitment and continuity which engenders trust between partners. The public sector’s role in mitigation of risk was also discussed in conjunction with the need for exit strategies in order to ensure the long-term sustainability and viability of a project.

The group also discussed the importance of value chain addition as well as multiplier effects and agriculture as a part of the picture of rural development. “We need to look at agriculture not as an entity unto itself but rather the hub from which many spokes emanate,” said Cacho.

Three main points emerged from the small group discussion, including: turning public good knowledge into something that the private sector can market; the need to develop methods to transfer knowledge and technology to build sustainability through up-scaling and out-scaling, as well as the fact that all actors of the value chain need to think, plan and work in cycles much longer than they are used to; and finally the risks and benefits of all partners should be identified and agreed upon and aligned from the beginning.

Cacho ended the session with a call to action: “The era of feeling comfortable is over. The new normal is feeling uncomfortable. Go ahead and feel uncomfortable and get something done!”

Managing Risks to Farmers in a Time of Change

The session focused on the challenges of climate change, uncertain markets and price volatility, and competition for land and water for other uses than food production. Participants called for risk management plans and adaptation tools for small-holder farmers.

“We face price volatility that is perhaps more severe now than ever,” said Jack Wilkinson, Vice Chairman of GFAR. “Farmers need the confidence to take risks and adopt new technologies without fear of losing everything, which can be achieved through support systems, such as crop insurance and credit programs.”

They also discussed the need to plant more diverse crops and establish more diverse farming systems. “Agriculture is focusing on too few crops and it is tending to promote uniformity,” said Jeff Sayer

of IUCN. “Research needs to be more closely linked to users, more locally adapted, more networked, more tapped into traditional knowledge.”

Patti Kristjanson of the CGIAR Challenge Program on climate change argued for better knowledge transfer between producers and users, along with institutional innovations. She said that it is necessary to engage in collective action, support and study new technology opportunities in rural areas, and find new approaches for efficient and effective means of bringing key actors together.

Dr. M. V. L. Sivakumar of the World Meteorological Organization named improvements in observation techniques and modeling and predictions, but also emphasized the need for more partnerships for successful implementation. Greatly increased user interaction is critical if we want to make progress, he said.

**Summary of the forest and trees session on Day 3 is not available.*