Major scientific achievements in Latin America and the Caribbean (LAC) in and beyond the CGIAR: Reflections and lessons[1]

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Abstract

LAC has had a long and deep tradition of agricultural innovation, dating all the way back to Pre-Columbian times. The region's National Agricultural Research Institutes (NARIs) emerged in the 1950s, inspired by the success of the Office of Special Studies, created in 1943 by the Mexican government and the Rockefeller Foundation. International agricultural research collaboration consequently emerged with the creation of the IRRI and CIMMYT Centers and eventually inspired the founding of the CGIAR system.

Initially, the NARIS' main objective was food security, so researchers targeted staple crops and focused on improving yields and quality through breeding and better crop management practices. Open access to improved germplasm and tools developed by CGIAR centers contributed greatly to the NARIs' achievements. Non CGIAR priority crops such as sugarcane, coffee, cacao, fruits, and vegetables benefited from both local and foreign innovations. In the southern cone high growth commodities such as soybeans, beef, and biofuels also benefited from both technological spillovers and local research.

LAC agricultural research institutions succeeded in generating or adapting science based technological innovations that contributed greatly to the production and productivity of basic staples and export oriented commodities. However the degree of success differed markedly between regions and the achievements carried significant environmental and social costs. The main beneficiaries were market-oriented medium and large producers, particularly those that were better organized and equipped.

Technology is not the only factor limiting agricultural productivity and sustainability. Experience suggests that innovations are also needed in factors such as: marketing, credit, producer organizations, rural infrastructure and education. Generating such innovations and formulating participatory development strategies requires joint efforts by governments and communities.

At present, the NARIs are not yet fully satisfying society's new demands for a more diverse, complex, and holistic agenda. To do so they would have to find ways to meet and reconcile apparently conflicting objectives – competitiveness, sustainability, and social and cultural inclusion. Global warming and a looming energy crisis add to the research agenda's complexity.

Tackling such a diverse, complex and far reaching agenda will put regional and global solidarity to the test. The region could benefit from better coordinated research initiatives and inter institutional synergies. Ongoing collaboration between NARIs and other researchers through existing organizations and networks at the sub-regional and continental levels could help tackle current and future problems.

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In some countries NARIS have tended to evolve into National Research Systems (NARS) involving networks of institutions promoting innovative, participatory development (organized by commodity, food or agro industrial chains, or water basins). Dialogue between NARIS and communities can help to create awareness about the economic, social and ecological impacts of agricultural research, and transparency and accountability can greatly contribute to making such dialogues more effective.

Agricultural research alone cannot resolve all social problems and inequities, but research strategies can be designed to contribute to poverty alleviation. While evidence suggests that agricultural research is one of the best possible investments that developing countries can make to meet their goals, the region currently invests less than 0.5% of its total agricultural income in R&D. Returns on such investments in LAC and elsewhere have been high and have not diminished over time, so it makes good sense to increase them. That would require a concerted commitment by both government and society to fund agricultural research more adequately.

Societies and governments face the challenge of recognizing that agriculture and the rural environment are not only engines for economic development that generate employment and income, but also play other roles essential for the quality of both rural and urban life, such as helping to maintain ecological balances and providing opportunities for recreation. Agricultural problems concern not only farmers but society as a whole. Current patterns of rural – urban interaction are both inequitable and ecologically unsustainable. Agriculture decisive influence on the wellbeing of present and future generations needs to be better recognized and the sector needs to be developed holistically.