Building resilient food systems through global collaboration

Interview with Dr. Muhammad Ibrahim

Agriculture is at a crossroads. Climate change, resource scarcity, shifting food demands, and social factors – like rural-to-urban migration and an ageing farming population – are forcing researchers, policymakers, and farmers to rethink the future of food production. Dr. Muhammad Ibrahim, Director for Technical Cooperation at the Inter-American Institute for Cooperation on Agriculture (IICA), and Executive Secretary of the Forum of the Americas on Agricultural Research and Technology Development (FORAGRO), is leading efforts to reshape agricultural research and policy. In this interview, he discusses the role of the Global National Agricultural Research Systems (NARS) Consortium, challenges in Latin America, and how international cooperation can create more resilient food systems.

Q: What is the Global NARS Consortium (GNC), and why was it created?

The GNC is an international network of national agricultural research organizations designed to strengthen collaboration and accelerate innovation in food systems. It was created to enhance networking, facilitate knowledge and technology exchange, and promote the adoption of climate-smart practices.

Innovation can't happen in isolation. The GNC provides a structured platform for cooperation. By linking national and regional research bodies, it enables institutions to co-develop solutions and implement agricultural advancements more efficiently. It uses a cascading model where regional efforts flow to national organizations, ensuring the exchange of knowledge, technology, and resources across borders – ultimately benefiting farmers, policymakers, and food security efforts worldwide.

Q: What are the biggest agricultural challenges in Latin America today?

Climate change is the most pressing challenge. It disrupts food production, reduces water availability, and increases the risk of hunger. Prolonged droughts and shifting rainfall patterns especially affect vulnerable areas like Central America's Dry Corridor and northern Mexico. Addressing this requires urgent investment in efficient irrigation, drought-resistant crops, and climate-smart farming systems.

Land degradation is another major issue, reducing productivity and pushing farmers to expand into forests – driving deforestation for commodities like soy, beef, and palm oil. We need to restore degraded lands while increasing yields through sustainable intensification – growing more without harming ecosystems.

Agriculture is also a major contributor to greenhouse gas emissions, particularly from livestock. Reducing emissions while maintaining production is essential. Simultaneously, global crises like COVID-19 have disrupted supply chains and raised input costs, making farming less profitable.

Compounding all this is chronic underinvestment in research and political instability. Many institutions lack the resources for large-scale studies, while ***governance is often shaped by short-term politics instead of long-term agricultural planning***. Meeting growing demands for nutritious, sustainably produced food adds further pressure.

Q: Tell us more about the solutions and how the GNC fits into them.

The key lies in research and innovation. ***Research generates new knowledge and tools – and when applied effectively, it leads to real-world impact.*** For Latin America, this means developing climate-smart systems, such as better water-use practices, improved irrigation, and drought-resistant, nutritious crops. Practices like agroforestry, silvopastoral systems, and regenerative agriculture help balance food production with conservation and reduce pressure on forests.

Restoring degraded land is another focus area. Research can guide soil rehabilitation, support sustainable intensification, and provide farmers with the knowledge and incentives to farm sustainably. Policy must be grounded in science, and research plays a vital role in informing decision-making and building long-term strategies.

A systems approach – which considers climate, food security, gender equality, and economics – is needed to align agricultural research with broader development goals. Models like CGIAR, which integrate cross-cutting themes, offer a useful roadmap.

Crucially, innovation must go beyond academic research. It must deliver tangible, scalable solutions, earn the trust of policymakers, and secure investment. That's where the GNC comes in. The GNC strengthens ties between research institutions, allowing smaller or underfunded organizations to benefit from shared expertise, technologies, and ideas. It maximizes limited resources through coordinated action.

The consortium also plays a key role in transforming research into action. One of the biggest barriers in agriculture is turning scientific findings into policy and practice. ***The GNC helps ensure successful innovations are scaled, evaluated, and understood by governments – helping drive the achievement of Sustainable Development Goals*** (SDGs) around food security, nutrition, water, and resilience.

It can also contribute to regional food sovereignty by reducing dependency on imports. In the Caribbean, for example, the Caribbean Community and Common Market (CARICOM's) goal to cut food import bills by 30% by 2030 underscores the need for local, research-driven solutions to boost production.

Q: What are the key obstacles to operationalizing the GNC in Latin America?

Funding is always a major constraint. Many national research institutions operate with limited budgets, which restricts their ability to conduct high-impact studies or invest in infrastructure and talent. Long-term investment in research, scientific capacity, and innovation systems is essential.

Another challenge is aligning research priorities with national policy frameworks. Although most countries have agricultural strategies, research is often disconnected from policymaking, reducing its influence. For real transformation, we need an integrated vision where research underpins planning and reform.

Q: What is your vision for the future of agricultural research and the GNC?

In regions like the Southern Cone – Argentina, Brazil, Chile, Paraguay and Uruguay – collaboration is already working well. Research institutions cooperate, share data, and influence policy. In Central America, however, research networks are weaker. Some mechanisms exist, like those supported by the Central American Council of Ministers of Agriculture, but they need strengthening. If the GNC can help bridge this divide, we'll have made real progress.

Looking ahead, ***global collaboration will be the key to resilient food systems.*** Climate volatility and rising food demand require coordinated responses, not competition. Consumers are increasingly demanding nutritious, sustainable food, but many systems can't yet deliver.

The GNC offers a way forward. By fostering innovation, accelerating research impact, and scaling best practices**, it can help ensure agriculture is ready to meet the challenges of tomorrow – before it's too late.**