



Green Growth Strategy, Vertical Integration, Far-Spread Digital Education and Gender Equality Needed Towards Self-Reliant Indian Agriculture

-Ranjitha Puskur, IRRI's Representative to India

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Intro: In an exclusive interview for Indiastat, Ranjitha Puskur, IRRI's Representative to India throws light on various aspects of the Indian Agriculture Sector, including the latest bone of contention - the amended farm laws. She informs senior journalist Mahima Sharma that such policies can always be double-edged swords depending on how they are interpreted and implemented. She adds that all possible loopholes must be identified to safeguard vulnerable small and marginal farmers; and also better communication is needed highlighting their pros and cons. For a deeper insight, read the full interview.

MS: In September 2021, the agriculture ministry signed 5 MoUs to promote digital technology in the farm sector. According to you what steps must the central government take to implement the Digital Science for Equity, Empowerment and Development?

RP: There is no doubt that digital technologies are the game changers in the agriculture and food sectors. We have already seen smart farming or precision farming being practised and digital technologies enabling traceability, connecting smallholder farmers to markets, financial inclusion among others. However, we still have several challenges to contend with if we have to make this a technology revolution that advances equity and empowerment. Digital science is a means to an end and should not become an end in itself. **We have a long way to go in terms of giving farmers access to technologies that can help them manage their scarce resources like water, inputs and capital; manage their crops; and tap into risk management mechanisms like insurance, markets.** The digital divide is a reality we cannot ignore. The latest NSSO says only 14.9% of rural households have access to the internet and these would be the better-endowed households. In addition to access, digital literacy and use are also low particularly among women who are the invisible backbone of Indian agriculture and poor smallholders in tribal and remote areas - and these are the ones who need them and could benefit most. **Making these technologies more affordable, using farmer collectives as conduits to reach these large numbers of unreached farmers, enhancing digital literacy** will be critical to make the most of these technologies and make a dent in the SDGs.

MS: Innovativeness, Improved Delivery and related Institutional Mechanisms - that's the name being given to super-markets that are fast taking over. How must equity and justifiable prices for the efforts farmers put in, must be ensured amid the ongoing commercialisation?

RP: Mining the farming-related big data and statistics that are available to analyse patterns and develop applications that will support precision agriculture and smart farming is a step in the right direction. What is important is to ensure this data and the analysis that emerges needs to be accessible to all - small and big corporations, farmers and their collectives and should not be cornered by a few elite corporations. **We need to engage farmers in such data collection moving forward and build their capacities to do so. There is a huge opportunity to train young rural women and men to engage in this.** Data democratization is critical if we need this to result in positive benefits for a wide section of the smallholder farming population through informed decision-making. The rural extension and advisory services need to be trained to harness such data so they can help the smallholder and women farmers effectively, often left behind due to the digital divide.

MS: What conceptual framework (to unravel gender dynamics in Agriculture Sector and Food Systems) does IRRI use to address Gender Inequalities in order to develop efficient, inclusive and resilient food systems in the future?

RP: The One CGIAR and IRRI which is a part of the global partnership aim for food systems transformation that is equitable and sustainable. (CGIAR is the world's largest global agricultural innovation network). The gender research for development in One CGIAR envisions a world where gender equality drives these food systems transformations and vice-versa in a changing climate. One CGIAR employs gender transformative approaches to analyse and address the inequalities. These approaches go beyond just filling the gender gaps in access to productive resources and assets but also unravel and **tackle the underlying root causes like formal and informal social and gender norms, institutions and other structural barriers that cause the gender gaps. This is important to ensure that the gains we make in gender equality and women's empowerment are lasting.** And when we look at women and men and youth, we recognise that they are not homogeneous groups. Interactional factors like class, caste, ethnicity, location all contribute to determining their individual identities and consequently influence their access to resources and opportunities. Our efforts are focused on harnessing the immense potential of women to be proactive agents of change who can drive food systems transformation, by influencing the creation of an enabling environment.

MS: Rural economy kept steady during Covid. Experts have attributed the 20.1% pick-up in overall growth for the first quarter of 2021-22 to a sharp base effect, compared to 1.6% year-on-year in the fourth quarter of 2020-21. What do you think worked for the sector? And what must other sectors learn from the farm sector?

RP: Rural economy, which is generally considered the weakest, actually demonstrated its resilience during the COVID19 crisis. This of course was helped by a good monsoon which led to a bumper harvest, the government's decision to keep the agricultural sector out of the ambit of lockdown during the first wave, procurement by the government, stable rural consumption supported by incomes through MGNREGA wages all contributed to this. The low level of cases in rural India during the first

wave allowed for all this to function. And there is no gain saying the importance of the resilience of our small scale farmers who have learnt over generations to tackle such crises and sustain their livelihoods. However, we cannot afford any complacency. While we need more systematic evidence on the impacts of reverse migration, we already have indications of increasing poverty, hunger and indebtedness amongst the rural population due to COVID19. The non-farm economy has its knock-on effects and until that is stabilised, we cannot rest. **The farm sector responded quickly to the situation and started using digital technologies for communication, market linkages etc. A number of civil society organizations and women's self-help groups etc sprung into action as the crisis hit and supported their communities and beyond. This agility and spirit of innovation, cooperation and collaboration is something that other sectors could emulate.**

MS: Last year India began cultivating Asafoetida/Hing on its soil for the first time towards self-reliance. What more steps need to be taken? Plus, what international alliances does IRRRI advise the central government for better food systems in India and towards self-reliance?

RP: The COVID19 pandemic-induced disruptions in global food chains have driven home the need to become self-reliant, particularly in agriculture to enhance resilience against such shocks in the future. It is important to identify the major and important products for which we rely on imports and make efforts to reduce that dependence, for example, edible oils. However, it is critical to assess our comparative advantage in producing these. Strategies for enhancing the competitiveness of such products through technological and institutional innovations should be developed as a first step. The focus needs to be on value addition, vertical integration and quality while providing adequate infrastructural and logistics support. It is important to tap into the new farmer producer organizations (FPOs) which are being promoted to facilitate this. With effective support, these organizations have the potential to make the country self-reliant. This could also offer remunerative opportunities for engaging youth, who are gradually leaving the agricultural sector. It is important to engage more intensively with international research consortia like CGIAR along with national research agencies and also the digital and spatial technology sector to provide the needed infusion of innovations.

MS: Climate change, sustainable agricultural practices, pesticide-free food chains and green energy utilisation in the farming sector. With respect to these areas, what reforms does IRRRI advise the government? How do you think these must be implemented on a faster basis?

RP: We need a green-growth strategy that can enable us to provide enough and nutritious food to all in an efficient and sustainable manner. And the challenge is to do it as the quality and quantity of natural resources is declining, adverse environmental impacts are increasing and climate shocks and stresses are increasing in frequency and intensity. **If we continue with the current practices, very soon our food supplies (quantity and quality) will be at risk. We need to give priority to research, development, innovation, education and information.** We need policies that support market functioning and allow prices that reflect the value of scarce natural resources and consider the reduction of subsidies and measures that promote environmentally harmful practices. Policies and programs should be designed to provide incentives for environmental good and services provision. Property rights that ensure optimal resource use are critical. Transformations like these that we are

seeking need profound changes and multiple technical, institutional and policy elements need to fall into place to allow changes to take place faster. We need to foster effective agricultural innovation systems, with a special emphasis on reskilling and retooling agricultural extension to facilitate this. One should also exercise caution and assess systematically the implications, learning from the example of Sri Lanka whose strategies led to an economic crisis.

MS: The decision of the agriculture ministry to recognise scientists as AIP (Agricultural Important Person) title is a welcome move. But when it comes to extensive research and replication of research findings on a large scale, there are serious limitations during their implementation. What steps need to be taken for faster and better implementation of scientific methods that can further boost the agricultural sector?

RP: Yes, innovation at a faster pace is important to face the burgeoning and wicked challenges we face in sustainable agricultural development. Traditionally, we have looked at technology development, dissemination (extension) and, scaling as a linear process and as responsibilities of different actors. This has led to a fractured system resulting in inefficient processes and lower impacts. **Agricultural innovation is a social process and is dependent on a network of actors. Often technology does not scale because it might not be relevant for the farmers or others in the food value chain. Understanding farmers needs, priorities and preferences should be the basis for research prioritization and technology development.** Otherwise, significant research investments do not bear fruit. Scaling is often misconstrued as being simple and is just about replicating solutions that have been tested in one place across a large number of geographical areas and farmers. Technologies need to be assessed not just for their suitability for different agro-ecological environments, but also for their relevance and acceptance in different socio-cultural and economic contexts. **One size does not fit all! Agricultural solutions and innovations cannot just be transplanted, it is a complex social process and demands flexibility and adaptive management based on constant learning.** We need a balance between technical and social sciences working together in a transdisciplinary manner to overcome these barriers.

MS: Your take on the new farm laws and the ongoing protests across India? (Share your response in the wake of farmers' suicide; the situation of farmers in India who at times throw away their crops for not getting genuine price and also agriculture being the only sector which hasn't seen a deep down graph during the pandemic)

RP: Market reforms in Indian agriculture have been long overdue and have been under discussion since 2001. The new farm laws come with very good intent and are trying to enhance choice for farmers. **Policies can always be double-edged swords depending on how they are interpreted and implemented. The devil is in the details.** They can impact different socio-economic groups of farmers differently. How the regional and local contexts play out will also determine who benefits and loses and how. **What is important is to identify the possible loopholes and make sure we have safeguards in place to protect the vulnerable small and marginal farmers in this process.** The intent to set up 10,000 FPOs to facilitate this shift is also commendable. But knowing how many of the existing FPOs are dysfunctional one needs to be cautious and think of the quality of FPOs being set up rather than chase some quantitative targets. The matter is sub-judice and it would be good if we

allowed time to see the outcomes from that process based on an objective assessment of merits and demerits. **Meanwhile, an attempt to better communicate these policies, highlighting their pros and cons** and what safeguards can be put in place would be helpful.

MS: How can Indian farmers improve their agricultural yield without much use of pesticides? What all is needed to bridge the gap between their efforts and the product in the changing health and climate change scenarios?

RP: Evidence shows that climate change through temperature and rainfall changes can affect the population size, survival rate and geographical distribution of pests. The concept of 'One Health', which recognizes the interconnection between people, animals, plants, and their shared environment and demands a collaborative approach at multiple levels to achieve optimal health outcomes for all compels us to think of alternative strategies to enhance yields with lower use of pesticides. These include **appropriate and precise social nutrient and health management, application of biofertilizers, intercropping with legume-based crops, crop rotation, development and adoption of insect-pest and disease-resistant varieties; integrated pest management; scientific storage and management practices; use of good quality seeds, accurate weather predictions amongst others.**

MS: India has enough food production in terms of the quantity of production. But several million still go hungry and are malnourished; farmers commit suicide. Thus, India needs a different set of solutions for agriculture, for those working on the land as well as for the deprived masses. What are your suggestions to the government in terms of policy shifts to overcome these challenges?

RP: Yes, India produces enough food to feed its population, yet we have persistent and stubborn pervasive hunger and malnutrition. The ongoing pandemic has exposed how fragile our food systems are. Even without COVID19 our numbers of hunger were rising (we added 60 million, hungry people, during 2014-19) - and it is estimated that Covid may add another 83-132 million undernourished. An increasing number of people had to reduce the quantity and quality of food they consume. There is an increased risk of child and women's malnutrition. Adult obesity is on the rise. What worries me really is the increasing inequalities we are witnessing as this unfolds. Important to note is that some sections are affected more than others. Rural more than urban, poor more than rich, women more than men. The irony is that the world produces enough food to feed its entire population, but more than 1.5 billion cannot afford a diet with the required levels of essential nutrients. Probably some of us don't even think of how much we spend on food, but more than 3 billion people cannot afford the cheapest healthy diet - and this has hidden health costs. We need to be able to provide safe, nutritious and sufficient food for all people all year round. **We need a food system that is resilient – but not resilient at the cost of a majority of smaller actors. For this, small scale producers need support to get nutritious foods to markets at low costs and ensure people have access to these food markets. We need strategies to make food supply chains work for vulnerable socio-economic groups.** We need investments in road and transportation networks; storage, processing and preservation facilities to preserve nutritive value; trade policies that reduce costs and enhance the affordability of healthy diets; more nutritious varieties of staple crops like rice and wheat – high zinc, high iron, low GI, high protein; biofortification; diversification of cropping systems to stimulate diverse diets; strategies to reduce food losses and wastes; climate-resilient varieties of crops; nutrition-sensitive social

protection policies – cash and in-kind transfers, school feeding programs, subsidization of nutritious foods and; higher investments in research and innovation. And it is important to recognise that **we cannot leave 50% of the population behind and that women can be powerful agents of change driving food systems transformations**. Make women and women's groups core part of the solution as leaders, innovators, farmers, market players, caretakers.

About Ranjitha Puskur, IRRI's Representative To India

Ranjitha Puskur is the International Rice Research Institute (IRRI)'s Representative to India and also the leader of their 'Gender and Livelihoods' research program. She is an agricultural economist, specialising in agricultural innovation systems and gender. She has been with the Consultative Group for International Agricultural Research (CGIAR) since 2002, working at the International Water Management Institute (IWMI), International Livestock Research Institute (ILRI), WorldFish and IRRI across Africa, Asia and Pacific. Her work focuses on generating knowledge, learning and evidence that can translate into technical and institutional innovation and lead to more equitable outcomes for women and other vulnerable social groups engaged in agriculture.

She also leads the Evidence Module in the CGIAR GENDER (Generating Evidence and New Directions for Equitable Results) Platform, which aims to deliver new evidence to fill key gaps in the gender and food systems domain to inform research, development practice and policy to facilitate design and implementation of solutions and trajectories to reduce gender inequalities. In her role as IRRI's Representative to India, she engages with government, non-government, civil society, private sector and investors to garner support for IRRI's R4D program and policy engagement in India, to contribute to agricultural sector development.

About the Interviewer

Mahima Sharma is an Independent Journalist based in Delhi NCR. She has been in the field of TV, Print & Online Journalism since 2005 and previously an additional three years in allied media. In her span of work she has been associated with CNN-News18, ANI - Asian News International (A collaboration with Reuters), Voice of India, Hindustan Times and various other top media brands of their times. In recent times, she has diversified her work as a Digital Media Marketing Consultant & Content Strategist as well. Mahima can be reached at media@indiastat.com

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