Seminar Report

Transforming Indian Agriculture: Pathways for Agroecological Transitions

27 March 2025 | CESS, Hyderabad

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Context

Agriculture remains vital to India's economy and society, employing about half our workforce. However the sector is currently grappling with a deepening agrarian crisis exacerbated by the Covid-19 pandemic, global conflicts, and climate change. This highlights the urgent need to transition to sustainable agri-food systems like agroecology, which offer resilience and equity but face significant barriers in scaling due to policy, market, and social constraints. While there is growing agreement on the importance of this shift, critical questions remain about how it will be implemented and who will bear the costs. Historically, farmers have shouldered the burden of food security at great personal and environmental cost. However, can this agroecological transition be more equitable and sustainable? Can a new policy ecosystem be designed to support farmers' well-being while ensuring a resilient food system?

To explore these issues, Centre for Sustainable Agriculture and Deccan Development Society organised a Seminar on 27th March, 2025, bringing together researchers and practitioners in policy, nutrition and agroecology to share their experiences and chart practical, farmer-friendly pathways for agroecological transformation in India.

Agenda

Session Time	Session Name	Discussants
4:00 - 4:30 PM	Registration	Ms Mamatha G
4:30 - 4:40 PM	Welcome and Introduction to Speakers	Dr Shirisha Junuthula
4.40 - 5.00 PM	Felicitation of Padma Shri Subhash Sharma Organic Farmer, Yavatmal	Subhash Sharma
5:00 - 5:30 PM	Speaker Presentation 1: Food Systems Transformation: need of the hour in the wake of food safety and nutrition crisis	Dr Lindsay M Jaacks
5:30 - 6:00 PM	Speaker Presentation 2: Status of Agriculture in Andhra Pradesh and Telangana: learning from the last two decades	Dr G. V. Ramanjaneyulu
6:00 - 6:30 PM	Speaker Presentation 3: Ensuring Income Security for Farmers: Key policy transitions	Dr Devinder Sharma
6:30 - 7:20 PM	Panel Discussion	Moderator: Dr. Kurmanath
7:20 - 7:30 PM	Closing Remarks/Vote of thanks	Ms Adrija Chaudhuri

Speaker Presentations

Subhash Sharma (Padma Shri) - Natural Farmer from Yavatmal, Maharashtra

From Agriculture to Agree-culture: A Vision for Sustainable Farming

In his opening remarks, Subhash Sharma outlined his vision for agriculture as 'Agree-culture', a system that will ensure balance and harmony between land, water and all living organisms. He outlined the urgent problems facing farmers today, including climate change, declining soil fertility, water scarcity and ecological degradation, and emphasised that even natural farmers are being impacted by these climate shifts. For living beings to thrive, access to food, water, and a healthy ecology is crucial, which in turn requires knowledge, planning, and labor. Unfortunately, Green Revolution-style agriculture has harmed all three of these essentials. He shared that, according to the latest science, there is a limited window—just ten years—to

address these critical issues, which makes a shift from conventional agriculture to 'Agree-culture' all the more necessary.

The Agree-culture approach embodies the principles of Paraspar Purakta (mutuality), Santulan (balance), and Swavlamban (self-reliance). Guided by these principles, Subhash ji outlined his ideas for sustainable and efficient farm design. Such farm design should allocate efforts accordingly: 2% to animal husbandry (Pashu Palan), 3% to water conservation, 30% to ecological restoration, and 65% to crop cultivation. It should also tap into farmers' inherent strengths—soil, water, seeds, crop rotation, labor relations, and marketing. However, these are undervalued and their development is not incentivised within the current system.

To address these issues, Subhash ji called for a fundamental shift in how society perceives agriculture, water and soil. He shared his belief that there is an urgent need to increase awareness among farmers and consumers and to launch a widespread campaign (andolan) that can reach the masses. To restore natural resources and improve the microclimate, farmers must also play their part by planting trees, recharging groundwater, increasing soil organic carbon through mulching, green manuring, biomass recycling, and the use of beneficial microorganisms. Seed sovereignty and strong labor relations are also vital for Agree-culture, for which we must cultivate respect for both farmers and labourers. Finally, Subhash ji emphasised the importance of marketing in agriculture, which should be based on four pillars: quantity, quality, variety, and building strong connections.

Dr Lindsay M Jaacks - Personal Chair of Global Health and Nutrition, University of Edinburgh

Food Systems Transformation: need of the hour in the wake of food safety and nutrition crisis

Dr Jaacks's talk provided a comprehensive overview of the evolving nutrition and health landscape in India, highlighting the complex interplay between dietary patterns, agricultural practices, and public health. She emphasized the country's ongoing nutrition transition, where undernutrition is being replaced by rising rates of obesity, diabetes, and anemia-even in rural areas. Drawing from evidence, she underscored how economic factors, public distribution systems, and Farmer Producer Organizations (FPOs) are reshaping food consumption-bringing both improved nutrient access and increased exposure to ultra-processed foods. Importantly, she stressed that education alone is insufficient for behavior change, advocating for stronger regulatory interventions to curb unhealthy food marketing, especially to children. Her insights on pesticide exposure and the benefits of organic and natural farming further underscored the need to prioritize farmer and consumer health. Significantly, she called for a policy-level push toward agroecological transition-highlighting initiatives like Andhra Pradesh's Community-managed Natural Farming as scalable models. This transition must be supported by integrated policies that align agriculture, health, and climate agendas, and place farmer

well-being at the center. Overall, the talk called for a more holistic, systems-oriented approach to food, farming, and health in India.

Key Points Discussed:

1. Nutrition & Health Trends in India

India is experiencing a nutrition transition, with a decline in underweight prevalence accompanied by rising rates of obesity, diabetes, and anemia. Rural areas are not exempt from these trends; for example, one in five adult men in rural Andhra Pradesh now has diabetes. Anemia remains high in both women (60%) and men (around 30%), indicating that the causes likely extend beyond biological factors such as menstruation and may be linked to issues like poor dietary diversity.

2. Food Consumption & Dietary Patterns

According to NSSO data, food expenditure as a proportion of income is declining, especially in rural areas. This trend is largely driven by reduced spending on cereals, which may reflect the success of the Public Distribution System (PDS) in meeting basic food grain needs. At the same time, there is an increase in spending on nutrient-rich foods such as dairy, eggs, fish, meat, and particularly fresh fruits. However, this shift is accompanied by a notable rise in expenditure on packaged and processed foods, raising concerns about the growing risk of diet-related diseases.

3. FPO Impact on Diet

A study led by Dr Jaacks on Farmer Producer Organizations (FPOs) in Uttar Pradesh found that FPO membership was associated with improved dietary diversity. Members reported increased consumption of healthy foods like vegetables, fruits, curd, and fish. However, the study also noted a rise in the intake of processed foods. This highlights the dual effect of rising incomes on diets: while access to a wider range of nutrients improves, there is also greater exposure to unhealthy food options.

4. Interventions Beyond Education

Public health interventions are often framed using a "ladder" model, which categorizes strategies by their level of intrusion and impact on individual choice. Education alone was found to be insufficient, as people often know what is healthy but fail to act accordingly. More impactful interventions include taxation, stricter marketing regulations, and limiting access to ultra-processed foods, particularly for children. There is an urgent need to restrict the marketing of unhealthy foods aimed at young audiences, given their vulnerability and long-term health risks.

5. Pesticide Exposure & Health Risks

Pesticide exposure poses significant health risks, with two primary biological effects being neurotoxicity and endocrine disruption. Neurotoxicity, such as that caused by organophosphates, is linked to developmental issues in children and conditions like Parkinson's disease. Endocrine-disrupting chemicals found in some pesticides have been associated with

diabetes, cancer, and male reproductive health problems. Ongoing lawsuits in the United States against glyphosate, a commonly used herbicide, raise concerns that a potential ban could result in surplus stock being offloaded in markets like India.

6. Organic/Natural Farming Benefits

Evidence from a French cohort study involving over 30,000 participants showed that organic food consumption significantly reduces the risk of diabetes, with effects comparable to those achieved by cutting down on sugary drinks. Additionally, organic diets have been shown to lower pesticide levels in urine within just two days. Early results from the Andhra Pradesh Community-managed Natural Farming (APCNF) initiative have shown significantly reduced pesticide levels in farmers' urine, even when the farming practices were not fully organic. This suggests that even partial shifts toward natural farming can yield measurable health benefits.

7. Emerging Focus Areas

There is a growing recognition of the need to expand the focus beyond pesticides to include climate-related occupational exposures, such as heat stress, among farmers. Policies must consider the overall health and wellbeing of farmers beyond food security and yield outcomes.

Dr G. V. Ramanjaneyulu - Executive Director, Centre for Sustainable Agriculture & Krishna Sudha Academy for Agroecology

Status of Agriculture in Andhra Pradesh and Telangana: learning from the last two decades

Dr. G.V. Ramanjaneyulu's talk provided a critical and systematic analysis of the deepening agrarian crisis in India, with specific reflections from Andhra Pradesh and Telangana. He highlighted the mismatch between the overwhelming dependence of the population on agriculture and the disproportionately low investments in the sector, especially for small and marginal farmers. Through a data-driven exploration, he demonstrated how rising cultivation costs, declining crop incomes, soil and water degradation, and increasing indebtedness are pushing farmers into chronic distress. He advocated for a paradigm shift toward comprehensive, agroecological solutions that are not fragmented but built on an enabling policy ecosystem-similar to how the Green Revolution was systemically supported. His call to action centered around income security for farmers, ecosystem services-based incentives, support for Farmer Producer Organizations (FPOs), and regulatory and public investment reforms to truly transition Indian agriculture toward sustainability and equity.

Key Points Discussed:

1. Agrarian Crisis & Farmer Incomes

Despite 54% of India's population depending on agriculture, the sector receives only about 15% of total investment. The average monthly farm income stands at approximately ₹10,000, with incomes from crop production stagnating. In Andhra Pradesh, only 21% of farm income is derived from crops, while the remaining portion comes from livestock and wage labor.

2. Declining Land Sizes & Resource Depletion

Marginal holdings are on the rise, even as land consolidation quietly continues in some areas. Soil degradation is a serious concern, with 16 tons of soil lost per hectare each year and 67% of soils classified as low in organic matter. Water use in rice farming is highly unsustainable, with a single season consuming the equivalent of five years' worth of rainfall.

3. Nutrient Deficiency & Food Quality

The decline in soil health is directly linked to reduced nutrient content in food. There is a growing presence of heavy metals and unabsorbed micronutrients in crops, which raises concerns about food quality and long-term health impacts.

4. Environmental Impacts

Fertilizer efficiency has dropped drastically, from producing 13 kg of yield per kg of input to just 3.2 kg. The ongoing provision of fertilizer subsidies and the excessive use of chemicals are driving up greenhouse gas emissions and contributing to environmental pollution. Notably, paddy cultivation in Telangana alone is a significant contributor to national CO_2 emissions.

5. Policy and Institutional Contradictions

Policy approaches remain inconsistent. Andhra Pradesh has actively promoted natural farming through its Community Managed Natural Farming (CNF) initiative, while Telangana has declined to implement similar programs despite the availability of central funds. Furthermore, existing incentives, such as those for paddy cultivation, do not align with sustainability or nutrition goals.

6. Pesticide and GM Crop Concerns

The unregulated use of genetically modified seeds and pesticides persists, with a rise in poisoning cases. There is a notable lack of oversight and safety protocols concerning agrochemicals, posing risks to both farmers and consumers.

7. Systemic Recommendations

A shift from fragmented interventions to ecosystem-level changes is necessary. There is a need for a comprehensive policy push-akin to the Green Revolution-that covers credit, marketing, extension, and education. Farmer incomes should be secured through diversified mechanisms, not solely through yield and price.

8. Support for FPOs and Public Infrastructure

Farmer Producer Organizations (FPOs) require time, credit, and incubation support similar to what is provided to startups. The government should focus on investing in rural infrastructure instead of overburdening FPOs with debt.

9. **Insurance & Income Security**

Residual risk in farming should be managed through universal, state-supported insurance models. Andhra Pradesh's example demonstrates that with proper design, crop insurance premiums can be reduced to as low as 4%. There is also a call for establishing a Farmers' Income Commission and introducing payments for ecosystem services to ensure long-term income security and sustainability for farmers.

Dr. Devinder Sharma - Distinguished food and trade policy analyst, member of Supreme Court appointed Committee on Agrarian Reforms

Ensuring Income Security for Farmers: Key policy transitions

Devinder Sharma's talk illustrated the disparities and precarity inherent within the agriculture sector in India and globally. Sharma highlighted the inequities between incomes of government employees and farmers within India, and also showed that Indian farmers are disadvantaged compared to their global counterparts, receiving far less government support than in wealthy economies such as the US. He also noted that everywhere across the world, agriculture and food systems are designed to push out farmers or keep them impoverished. At the same time, global food systems are moving towards automation, mechanisation and synthetic food, in the name of mitigating climate change. Sharma shared his apprehension that this would ultimately benefit the larger food conglomerates and industry players, while shortchanging consumers and farmers. For holistic alternatives such as agroecology to gain momentum, Sharma believed that consumers, farmers and citizens would need to collectively take a stand for healthy, sustainable food and stall the industry-led takeover of agriculture and food systems.

Key Points:

1. **Farmer Incomes vs Government Salaries**:

   Farmers earn an average of just ₹27/day from farming, with no real increase over time, while government salaries increase regularly due to Pay Commission revisions. The 8th Pay Commission (2026) proposes a fitment factor of 2.5–2.8, which would increase government salaries significantly. By 2046, a government peon's salary could reach ₹4.5 lakh/month. A ₹10,000 pension for farmers is denied due to lack of funds, while ₹2 lakh pensions for government employees are accepted. This creates a growing economic and social imbalance.

2. **Inequality in Global Context**:

   According to the World Bank, Indian government employees are among the highest paid globally. Simultaneously, according to an OECD report, Indian farmers faced consistent losses from 2000–2024, being the only such farming community globally. In contrast to India, only 1.5% of the U.S. population are farmers, yet they receive massive subsidies. U.S. cotton farmers (around 8,000) receive over $100,000/year in subsidies on large landholdings (400 ha. on average). Indian cotton farmers (98 lakh) receive just $27/year on 1–3 acre plots. It is no wonder that they struggle to compete in global markets.

3. **Perceptions of Farmer Support**:

   In India, MSP and procurement are wrongly labelled as subsidies, unlike government salaries. Punjab's stubble burning is also blamed on farmers, although paddy cultivation was not native to Punjab and promoted by agricultural scientists during the Green Revolution. These scientists have still not accepted responsibility and continue to promote potentially harmful technologies such as GM. Similarly, farm electricity subsidies are criticized, but high government employee salaries (40% above average in Punjab) are ignored.

4. **Agriculture's Role in Climate Change:**

   Europe is reducing farming populations in an effort to mitigate climate emissions from agriculture (e.g., thousands of farmers in the UK and Netherlands have been asked to transition out of agriculture). Agriculture is being disproportionately penalised for its contribution to climate change as opposed to industry, a much larger contributor. For example, New Zealand has introduced methane taxes on cows, but no similar taxes on polluting industries.

5. **Corporate Control & Synthetic Food**:

   Globally, food companies are shifting the focus from food security to protein security, due to the higher profit margins in the latter. Finland has a food factory producing 500 million meals annually without land or farmers. 270 companies globally are producing synthetic food, including protein from insects and sea animals like octopuses. These developments threaten traditional farming models.

6. **Agri Revolution 4.0**:

   The shift towards mechanised, automated farming is underway globally, not only in rich countries but also those in the Global South including Thailand. Profits are being concentrated in the hands of food billionaires and conglomerates (68 food billionaires have been identified by Oxfam), who wield massive influence in shaping policy agendas.

7. **Call to Action**:

   Today, agroecology offers solutions to heal our broken food system. For this to happen, the public, including farmers and consumers, must collectively take a stand. Consumers must demand healthy, natural food and lead a collective, people-driven agricultural revolution — not one led by corporations.

Panel Discussion

Post the speaker presentations, there was a panel discussion with the speakers, moderated by Dr. Kurmanath KV, Senior Deputy Editor, Hindu Business Line. The discussion touched upon several issues in agriculture at the policy, farmer and collective level. Subhash Sharma spoke of the issues facing farmers in adopting natural farming practices and receiving good prices for their produce. Devinder Sharama spoke of the role of the national and state governments, including the bureaucracy, in promoting agroecology as well as the importance of raising awareness in civil society. Dr. Ramanjaneyulu touched upon the challenges that producers' collectives such as FPOs face, including lack of access to credit, an unfair taxation system that taxes farm inputs but not outputs, and flagrant violations of legal provisions such as very high interest rates on crop loans and spurious pesticide sales. He also spoke of the unrealistic expectations upon FPOs to correct long-running systemic issues facing farmers that agriculture departments and universities have been unable to solve. Ultimately, the discussion concluded that there was much work to be done among farmers, consumers and policymakers to bring about the necessary transition in our food systems.

About the Organisers

Centre for Sustainable Agriculture (CSA) - CSA has been working for over 20 years on promoting sustainable agricultural practices. It envisions becoming a national institution to lead the transition of Indian agriculture to become ecologically, economically, and socially viable. CSA has pioneered experimental approaches by introducing innovative practices, processes, and institutions aimed at building resilience for farmer households against climate and market risks. The organization's primary work spans across Andhra Pradesh, Telangana, and Maharashtra, directly engaging with over 50,000 farmers and supporting more than 1,00,000 farmers throughout India.

Deccan Development Society (DDS) - Deccan Development Society (DDS), initiated in 1983, is a grassroots organization working with nearly 5000 dalit and indigenous small women farmer sanghams (village level voluntary associations) in Zaheerabad region of Telangana, India. It strives for just and sustainable development and to assert the sanghams' autonomy in multiple spheres like food, nutrition, seeds, market, media etc. DDS promotes and works to revive traditional knowledge in farming and seeds; demonstrates its efficacy through wide experimentation and advocates for the inclusion of this knowledge in the public food policy systems.

Glimpses from the Event

Felicitation of Subhash Sharma

Opening Remarks by Subhash Sharma

Audience participating in the event

Dr. Lindsay delivering her presentation

Presentation by Dr. Ramoo

Presentation by Dr. Devinder Sharma

Panel Discussion

Felicitation of Dr. Lindsay

Felicitation of Dr. Devinder Sharma

Felicitation of Dr. Kurmanath