"To Secure Food, India Must Reform Trade, Not Just Produce More"

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"The Challenge Isn't Output — It's Employment and Equity"

Intro: *"India's agriculture has transformed in output, but not in employment,"* observes **Dr. Pratap Singh Birthal, Director of the ICAR-NIAP.** In an exclusive conversation with **Mahima Sharma** of **Indiastat**, he outlines how India's rural workforce is trapped in a paradox—locked in low-productivity agriculture even as the sector's GDP share dwindles. From jobless growth to skewed subsidies, underutilised solar energy to fragile food systems—Dr. Birthal connects the dots between policy, productivity, and the promise of inclusive growth. Read the full interview now at **Socio-economic Voices.**

MS: How has the structural transformation of India's agricultural sector led to "jobless growth," and what are its implications for economic development?

Dr. Birthal: The structural transformation of India's agricultural sector has been characterized by a consistent decline in its contribution to national income—from **43% in 1970-71 to 18% in 2022-23**—while the sector continues to employ a disproportionately large share of the workforce (**46% in 2022-23**, down from 74% in 1972-73). This growing divergence between the sector's economic contribution and its employment share embodies the classical symptoms of **"jobless growth".**

At the heart of this phenomenon lies a fundamental developmental asymmetry: the economy has diversified toward services and industry, but **non-agricultural sectors have not generated adequate employment to absorb the surplus labour** willing to quit agriculture. As a result, a large segment of the population remains "locked" in low-productivity agricultural work, contributing to low-employment low-income syndrom for rural households.

In my studies and reports, several factors compound this imbalance:

- **Fragmentation of landholdings -** Marginal holdings (≤1 ha) now constitute over 68% of total, with average landholding size falling to 1.08 ha, making agriculture less viable as a sole source of livelihood.
- **Shift toward livestock and fisheries -** While these sub-sectors have driven recent agricultural growth—growing at 5.8% and 9% annually in the last decade—they remain insufficient to create large-scale employment due to their **capital-intensive and informal nature.**
- **Urban pull without rural push -** Migration to urban centers is often informal and without skill training, leading to a swelling of the urban informal sector rather than productive employment.

This partial transformation implies the agriculture sector is becoming more diversified and efficient in its output composition. But the labour structure remains rigid and ill-adapted. Such jobless growth has several implications:

- **Economic Inequality** that widens income disparities between those in high-productivity urban sectors and those in rural areas tied to low-productivity jobs.
- **Depressed Consumption** because the underemployment suppresses rural demand, weakening overall consumption growth—a key pillar of India's domestic-led growth strategy.
- **Social and Political Strain** that is coming from persistent rural distress without adequate off-farm employment opportunities can lead to discontent, policy populism and social-unrest.
- **Stunted Demographic Dividend** because India risks squandering its demographic advantage if rural youth are not equipped to transition into modern, formal sector jobs.

Therefore, **addressing jobless growth requires a dual approach:**

– accelerating labour absorption in non-agricultural sectors through rural industrialization.

– skilling and transforming agriculture itself into a viable, competitive enterprise by promoting agro-based industries, rural MSMEs and value chain linkages.

MS: What policy measures can facilitate a balanced transition of the workforce from agriculture to other sectors in India?

Dr. Birthal: To facilitate a balanced shift of labour from agriculture to non-agricultural sectors, India must adopt a multi-pronged strategy rooted in realism and inclusivity.

First, **rural industrialisation must be prioritised.** The slow pace of industrial development in rural areas has failed to absorb surplus labour from agriculture. India faces a "jobless growth" challenge—agriculture's share in GDP has sharply fallen (from 43% in 1970–71 to 18% in 2022–23), yet it still engages 46% of the workforce. This mismatch reveals a lack of sufficient employment in industry and services to absorb surplus farm labour. Establishing agro-based micro, small and medium enterprises (MSMEs) can provide alternative employment while adding value to farm output.

Second, **skilling and reskilling programmes are vital.** A majority of agricultural workers are unskilled or semi-skilled. Structured and targetted skill development aligned with local industrial and service sector needs will ease their movement into more productive employment.

Third, **promoting high-value agriculture**—can create off-farm jobs and raise incomes. The average landholding is shrinking (from 2.28 ha in 1970–71 to 1.08 ha in 2015–16) and marginal farms now make up over 68% of total holdings. This leads to disguised unemployment. Supporting farmers to shift towards less land-intensive, more remunerative activities like **livestock and fisheries** and even towards horticulture can raise rural incomes.

Fourth, **investment in rural infrastructure**—transport, digital access and markets—will connect villages to broader economic networks, enabling easier movement of both goods and labour.

Lastly, **reforming land policies** to allow leasing or consolidation will free smallholders from subsistence traps and support their transition to other sectors. The livestock sector, growing at nearly 6% annually and fisheries at 9%, have shown resilience and offer employment across their value chains. Policies must strengthen these sectors to absorb labour moving out of cropping.

A smooth transition demands coordinated action across government levels, focusing on employment generation, equity and environmental sustainability. **In short: move the people, but don't leave the land behind.**

MS: How are India's food consumption patterns expected to evolve by 2047 and what factors will drive this change?

Dr. Birthal: See India is envisioned to be in the group of developed nations by 2047, the centennial year of its independence. Our food consumption patterns have been changing, and will transform further. As India moves towards becoming a developed nation, diets will become more diverse and nutrition-focused. The share of cereals like rice and wheat will decline, while the demand for fruits, vegetables, dairy, meat, fish and processed foods will grow substantially.

By 2047, overall food demand is projected to more than double, while the demand for nutrient-rich foods could grow by three to four times. This reflects greater health awareness, a transition from calorie sufficiency to diet quality and growing preferences for convenience foods in urban areas.

Key drivers of this change will have some factors that I am now listing:

- **Economic growth** which raises purchasing power is expected to grow at approximately 8% a year.
- **Urbanisation is expected to reach nearly 50% of the population.** It would be influencing dietary habits towards more protein and processed food.
- **Demographic changes,** including a larger, younger and more health-conscious population.
- **Shift in production towards high-value, less land-intensive commodities** like livestock and fisheries, matching the evolving consumer preferences.

This transition, while promising, poses challenges for food production, resource use and sustainability. Thus the change is calling for a reorientation of agri-food policies to meet future demands of different food commodities efficiently and responsibly.

MS: What role does international trade play in ensuring food security in India and what are the key challenges?

Dr. Birthal: International trade plays a vital role in supporting food security in India. It acts as a buffer against domestic production shocks caused by weather extremes, pest outbreaks or supply disruptions. By enabling imports, trade ensures the availability of essential food items during shortages. Exports, on the other hand, help in managing surpluses, particularly of rice and wheat. These help in preventing wastage and stabilising prices. Moreover, trade can promote dietary diversity by allowing access to a wider range of food products, supporting nutritional goals.

However, there are key challenges.

– India faces high reliance on imports for edible oils, pulses and fresh fruits, which exposes the food system to global price volatility and supply chain risks.

– Export competitiveness is hindered by poor infrastructure, weak compliance with food safety standards and limited market intelligence.

– Trade policy distortions, such as frequent export bans or high import tariffs, create uncertainty for producers and traders, undermining long-term trade prospects.

Thus, a comprehensive trade strategy is essential. It should combine investment in quality control, logistics and market intelligence with reforms in tariff structures to reduce dependency and boost export competitiveness. Done wisely, trade can act as a stabiliser and enhancer of India's food security.

MS: Why is excessive reliance on non-renewable energy sources a major challenge for India's agri-food system transformation?

Dr. Birthal: India's agri-food system relies heavily on non-renewable energy, particularly subsidised electricity for irrigation. Over time, this has encouraged excessive extraction of groundwater, especially in states like Punjab, Haryana and Rajasthan. Currently, agriculture consumes **83% of India's water** and irrigation demand is projected to rise by **18%** over current levels. However, water use efficiency remains low at **35–40%**, far below countries like China or the US.

Electricity subsidies for agriculture have led to the **overuse of power and water,** resulting in unsustainable practices. Despite having a **solar power potential of 102 GW** for agriculture, only **1%** has been tapped so far. This slow adoption is due in part to the continuation of **free or heavily subsidised electricity,** which discourages the transition to clean energy sources like solar pumps.

The challenge is both economic and ecological. Non-renewable energy increases input costs, contributes to greenhouse gas emissions and worsens environmental degradation. For a sustainable agri-food future, India must phase out blanket power subsidies, promote solar-based irrigation and align energy policies with climate goals.

MS: How do underdeveloped markets and weak value chains hinder agricultural growth in India?

Dr. Birthal: Underdeveloped markets and fragmented value chains significantly constrain India's agricultural potential. **Nearly 46% to 99% of surplus of different commodities is sold to local traders or informal buyers, often under distress sales.** This severely limits price realisation and diminishes farmers' bargaining power.

Infrastructure gaps—such as insufficient cold storage, inadequate rural transport and lack of quality control systems—raise transaction costs and cause high post-harvest losses, especially for perishables. As a result, high-value crops like fruits and vegetables remain underexploited, despite rising consumer demand.

Platforms like e-NAM, though promising, are underutilised due to infrastructure shortfalls and weak quality standards. Moreover, Farmer Producer Organisations (FPOs) and cooperatives have limited reach, further impeding aggregation, scale and access to formal markets.

This disconnect between production and markets reduces farm incomes, stifles private investment and ultimately undermines the structural transformation of agriculture. To unlock growth, **India must prioritise modern, integrated market infrastructure and inclusive value chains.**

MS: Why is repurposing fertilizer subsidies essential for India's agricultural sustainability and what alternative approaches can be adopted?

Dr. Birthal: India's fertiliser subsidies disproportionately favour nitrogenous fertilisers, especially urea, resulting in a heavily skewed **NPK (Nitrogen:Phosphorus:Potassium) ratio of 11.8:4.6:1 instead of the ideal 4:2:1.** This imbalance is deteriorating soil health, reducing productivity and increasing environmental degradation. Moreover, the **fertiliser use efficiency remains worryingly low—only 35–40% for nitrogen, 15–25% for phosphorus and 50–60% for potassium.** This is leading to both economic waste and ecological harm.

Repurposing these subsidies is essential to:

- Restore nutrient balance in soils.
- Improve fertiliser efficiency.
- Cut environmental damage from excess chemical use.
- Encourage sustainable practices.

By reallocating subsidies towards smarter, targeted and environmentally sound solutions, India can ensure long-term productivity and resilience in its agri-food system. Thus, **alternative approaches must ideally include:**

- Linking fertiliser subsidies to Soil Health Cards to tailor nutrient supply based on actual soil needs.
- Promoting organic and bio-fertilisers through direct financial support.
- Investing in nano-fertilisers and precision agriculture technologies such as drones and GPS tools to reduce overuse and enhance targeting.
- Incentivising crop diversification and rotation, which naturally improves soil fertility.
- Bundling fertiliser reforms with climate-smart agriculture initiatives for synergistic impact.

MS: What should be the key components of an effective agricultural credit policy to support farmers in India?

Dr. Birthal: See, we need a credit policy that looks beyond the next harvest. It should help farmers manage risk, invest in the future and build sustainable incomes—across crops, animals and regions. And to actually, truly support Indian farmers, an effective agricultural credit policy needs to do a few smart things:

1. **Make credit more balanced across sectors.** Right now, most of the credit goes to crops, but sectors like animal husbandry—which is a major income source for many small farmers—get just 6% of the total agricultural credit. That needs to change. These areas are growing fast and can help farmers earn more reliably.
2. **Shift focus from short-term loans to long-term growth.** Right now, about 60% of agricultural credit is short-term, mostly for seasonal crop inputs. But farmers also need support to invest in machinery, irrigation and infrastructure—things that improve productivity over time. The policy should actively support this.
3. **Help farmers manage risk, not just productivity.** We all are aware that the drastic climate change is making farming riskier. Instead of only giving loans to increase output, credit should also help farmers handle droughts, floods and price shocks. One good idea is to link loans with crop insurance or develop region-specific products with digital tools like satellite data and drones for risk assessment.
4. **Reduce regional imbalances in credit.** Some regions—especially southern states—get much more credit than others. That leaves many farmers in the north and east behind. A smarter policy would ensure more even distribution of credit across regions, especially where credit is currently low.
5. **Support high-value farming** because farmers are gradually moving from staple crops to activities like dairy, poultry, fisheries and fruits and vegetables. These areas need more targeted credit support to grow. Right now, that support is lacking.
6. **Use tech to deliver smarter credit.** Credit delivery can be improved using digital records, mobile platforms and tools like Aadhaar-linked accounts and Soil Health Cards. These can help tailor credit to individual farmer needs and reduce misuse.

About Dr PS Birthal

Dr. Pratap Singh Birthal is the Director of the ICAR-National Institute of Agricultural Economics and Policy Research (ICAR-NIAP) in New Delhi. He previously served as an ICAR National Professor at the same institute. Dr. Birthal has also been a Principal Economist at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and Director of the Institute of Development Studies, Jaipur. His contributions focus on technology policy, institutional change, livestock development, and climate change. He is a Fellow of the National Academy of Agricultural Sciences and the Indian Society of Agricultural Economics. Dr. Birthal has received several awards, including the ICAR Rafi Ahmad Kidwai Award and the NAAS Recognition Award.

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. Starting March 2021, she is also a pan-India Entrepreneurship Education Mentor at Women Will - An Entrepreneurship Program by Google in Collaboration with SHEROES. Mahima can be reached at media@indiastat.com