# Tackling Rural Distress in the 21st Century
# A New Trans-disciplinary Multi-stakeholder Paradigm of Development

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Mihir Shah
Distinguished Professor, Shiv Nadar University
Former Member, Planning Commission, Government of India

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# Rural Distress Needs Urgent Attention

- Global rural population, which is 3.4 billion today, will remain over 3 billion even in 2050
- An overwhelming proportion of people in developing countries will continue to live in rural areas well beyond 2050
- Possibility of absorption of more rural migrants into urban areas faces severe constraints
- Urban crisis is almost everywhere perhaps even more grave than the rural

# Can we Leapfrog into the 21st Century?

- The good news: both old and emergent challenges open up new opportunities for the developing world to leapfrog into the 21st century on the back of exciting new technological, social and ecological innovations
- I outline why governments need to forge partnerships with other key stakeholders to facilitate these possibilities and how exactly this can be done, through proofs-of-concept of best development practice from across the globe

# 1. Ecological Innovations: Economy as subset of Larger Eco-systems

# 1.1 China: Ecological Civilisation

- China's commitment over the last decade to the goal of Ecological Civilisation is a great inspiration (ADB)
  - the need to respect, protect and adapt to nature;
  - a commitment to resource conservation;
  - environmental restoration and protection;
  - recycling;
  - low-carbon use; and
  - sustainable development
- Chinese concept of "ecological space" to be be ranked alongside "urban space" and "agricultural space" as one of three key spaces in need of careful management
- Ecological red lines are "the most important, the most key part of ecological space, needing implementation of the strictest protection and utilisation controls."

# Green Revolution runs out of Steam

- FAO (2017): "High-input, resource-intensive farming systems, which have caused massive deforestation, water scarcities, soil depletion and high levels of greenhouse gas emissions, cannot deliver sustainable food and agricultural production. Needed are innovative systems that protect and enhance the natural resource base, while increasing productivity. Needed is a transformative process towards 'holistic' approaches, such as agro-ecology and conservation agriculture, which also build upon indigenous and traditional knowledge."

# We need a New Agriculture

- Chemical agriculture reaching limits, yielding negative marginal returns due to reduced yield response to fertilisers and pesticides
- This has led to a dramatic rise in costs of production, resulting in negative net income
- Typical knee-jerk response: higher subsidies for chemical inputs, cash transfers, loan waivers, higher MSPs for wheat and rice etc
- But this will only reinforce the vicious cycle, which created the problem in the first place

# 1.2 India: Towards Alternatives at Scale

- These include the well-tried and tested
  - Low-budget Natural Farming (LBNF)
  - Conservation Agriculture
  - Low External Input Sustainable Agriculture
- Biggest ever experiment underway in the Indian state of AP: 8 million ha by 2027; initial results show higher farmer net incomes on natural farms
- Win-wins for farmer incomes, soil health, water security and consumer health

# 2. Nutrition Innovations: The Global Syndemic of Malnutrition, Obesity and Climate Change

# The Farm Crisis is also a Health Crisis

- *The Global Syndemic of Obesity, Undernutrition, and Climate Change*: The Lancet Commission (2019)
- Diabetics increased in India from 26 million in 1990 to 65 million in 2016.
- This number is projected to double by 2030.
- A major contributor to this epidemic is the displacement of whole foods in our diets by energy dense and nutrient-poor, ultra-processed food products.

# Addressing the Nutrition Crisis

- Diversified cropping pattern: millets, pulses, oilseeds: higher protein, fibre iron content; lower GI
- Millets, pulses and oilseeds also are climate resilient crops suited for the water-scarce dry regions that dominate the globe
- Local agro-processing infrastructure would go a long way in addressing the malnutrition-diabetes syndrome and help move farmers up the value chain
- Cold chains for perishables would help farmers diversify into fruits and vegetables

# 3. A Paradigm Shift in Water Management

# India's Paradigm Shift in Water

- In 2009, Prime Minister Manmohan Singh invited me to join the Planning Commission
- A key specific mandate of my 5-year tenure was to lead a paradigm shift in water management in India
- In a remarkable expression of continuity of governance, the present government has asked me to carry forward this work over the past 5 years
- To resolve conflicts over water, across provinces within nations or across countries within regions with shared resources, this fundamental change is needed

# India's Paradigm Shift in Water

1. Weaving our Interventions into the Contours of Nature: Economy as part of Eco-system
2. Move from Command-and-Control to Participatory Management of River Basins and Aquifers as CPRs
3. Trans-disciplinarity
4. Multi-dimensionality
5. Demand-management and Sustainability
6. Equity in Access to Water
7. Transparency, User-friendly Access to Water Data
8. Governance based on Partnerships

# 4. A New Vision of Infrastructure: Leapfrogging into the 21st Century

# Blue-Green Infrastructure

- Developed nations across continents are all recognising that the era of the Anthropocene demands an understanding that the economy is but a small element within the larger eco-system.
- This acknowledgement opens up exciting new possibilities of innovative infrastructure investment
- "Building with nature" and "room-for-the-river" perspectives place much greater emphasis on low-cost blue-green infrastructure that connects hydrological functions (blue) with vegetation systems (green)

# Innovative Technologies of Waste Management

- Greater emphasis is to be given to eco-restorative, low-cost technologies, with lower energy requirements
- These bio-remediation vertical eco-filtration techniques were developed in the 1990s to treat wastewater and converted later into horizontal eco-filtration techniques or the "green-bridge system"
- These innovations have helped lower operational costs substantially by reducing electricity consumption, chemical and manpower requirements.
- They represent the way forward for waste management, which is the single most important emerging issue globally, for water, health and environment

# 5. Leveraging the Power of Markets through Collective Action

# Market as Adversary to the Power of Markets

- Globally, rural areas are overwhelmingly dominated by small and marginal producers, mainly farmers
- Markets don't treat single, isolated producers very well
- But large collectives, especially when led by women, often organised into Producer Companies, have shown how the market can be a friend of the poor
- Both as producer and as consumer
- For them to be able to get the best price and to overcome the high costs of logistics, it is important for governments and donors to provide key support to such initiatives, which is often missing
- Powerful institutions of the poor are a key missing element in the battle against poverty

# 6. Innovations in Implementation: Invisible Infrastructure and the Principle of Subsidiarity

# Participatory Approaches to Development

- Health, education, sanitation, nutrition or water, development experience throughout the globe shows that it is participatory approaches that work best
- Effective participation and oversight of local communities, best led by women, optimises outcomes
- In discretionary, transactions-intensive programs people's participation, provides context-specific knowledge
- Invisible infrastructure: social and human systems that enable citizens to realize capabilities, escape poverty

Harnessing Power of Ecology

Evergreen Revolution

Blue Green Infrastructure

Institutions of the Poor Led by Women