Agro-Imperialism & The Indian Farmer

Navara Rice From Kerala

# FARMERS' FORUM

Vol. 19; No. 04; Aug-Sept 2019 ₹100 www.farmersforum.in

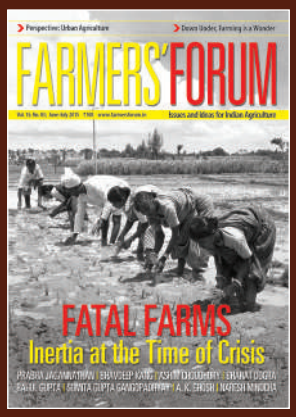
Issues and Ideas for Indian Agriculture

# FOOD SYSTEMS FAILURES

## CAN AGRO-BIODIVERSITY TURN THINGS AROUND?

PRAVIN KULKARNI | LOPAMUDRA MAITRA BAJPAI



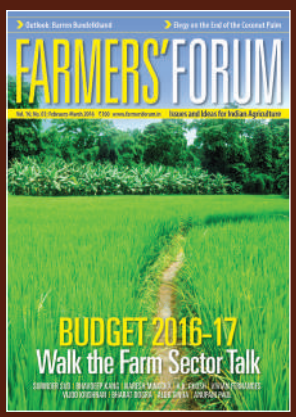







# Check out all the Earlier Issues at

# WWW.FARMERSFORUM.IN










Volume 19; No. 04;
August-September 2019
RNI No. DELENG/2001/5526

**Editor, Printer & Publisher**
Ajay Vir Jakhar

**Editorial Board**
Prof. M.S. Swaminathan
Dr R.S. Paroda
J.N.L. Srivastava

**Editorial Support**
Aditi Roy Ghatak

**Design**
© PealiDezine
*pealiduttagupta@pealidezine.com*

**Contact us/Subscription**
*ho@bks.org.in*

**Owner**
Bharat Krishak Samaj

**Published at**
Bharat Krishak Samaj,
A-1, Nizamuddin West,
New Delhi 110013

**Printed at**
Brijbasi Art Press Ltd., E-46/11, Okhla Industrial Area, Phase-II, New Delhi

**Cover Photo**
Pixabay



# Time to 'Unrig' The Farmers' World

Leo Tolstoy, amongst my favourite writers, wrote: "the most difficult subjects can be explained to the most slow-witted man if he has not formed any idea of them already; but the simplest thing cannot be made clear to the most intelligent man if he is firmly persuaded that he knows already, without a shadow of doubt, what is laid before him". Nevertheless, the Russian literateur managed to bring many such people within the circle of understanding.

One is not a Tolstoy and hence one faces a wall when trying to convey some simple farming truths to the mandarins in the policy-making regime in India. Evidence presented to them may almost not be there in what seems to be a hapless rigging of minds that defies reason. Some are so engrossed in debating the merits of particular actions that the principles on which the actions are based get defenestrated, leaving the intended beneficiaries short changed.

Some policy-makers in India, trying to navigate agriculture policy through a minefield of contradictions, despite their best of intensions, often without the backing of political will, capacity and the consistency, fail to meet farmer expectations. The bull run in commodities ended at the beginning of this decade and since then, food prices have generally remained subdued, instilling a sense of complacency amongst the public and those that influence policy.

Consequently, public funding for agricultural research and the subsequent deployment of funds on human resources for agriculture have been reduced substantially in real terms. This should worry even someone with limited wisdom. It is doubly worrisome because it comes at a time when scientists are loudly and justifiably beating the war drums to warn of impending challenges in food availability arising from climate change. Yet the policy-level jingoism is about the surplus in agriculture production.

SOME POLICY-MAKERS IN INDIA, TRYING TO NAVIGATE AGRICULTURE POLICY THROUGH A MINEFIELD OF CONTRADICTIONS, FAIL TO MEET FARMER EXPECTATIONS

The Indian population is expected to peak in 20 years and wild claims are being made that India will have a problem of 20 per cent surplus agriculture production. The possibility that the recent surge in surpluses is deceiving and too meagre to justify this sense smug satisfaction eludes them.

Yet again, there is this bewildering contradiction in the government simultaneously and constantly reminding one about the need to target increasing food production by 50 per cent by the year 2050. This has become the cornerstone of India's national policy matrix for measuring farmer prosperity and an integral part of ongoing farming dialogues.



STARVED OF FUNDS TO MEET THE CLIMATE CHANGE CHALLENGES, THE EXHAUSTED PUBLIC RESEARCH SYSTEM HAS TAKEN THE EASIER PATH OF MAXIMIZING FARM YIELDS BY MONO-CROPPING

Starved of funds to meet the climate change challenges, the exhausted public research system (0.37 per cent of the agriculture budget) has taken the easier path of maximizing farm yields by mono-cropping. This, in turn, encourages agricultural practices that are responsible for 35 per cent of the world's greenhouse gas emissions.

Completing the vicious circle are farming practices maximizing yield, which accelerate climate change, which then necessitate yields to be maximized. This is exactly the point that Inter-Governmental Panel on Climate Change has been making. Farmers need no convincing that climate is headed towards a dreadful scenario but poorly informed policy-makers are failing to grasp the gravity of the situation.

Most certainly, policies on food production are not reflecting the exigencies of the situation that demand a drastric change in attitude and understanding. The outcome is that millions of acres of a few cereal crops are planted, which is directly in conflict with the need to conserve biodiversity.

Agro-biodiversity (Farmers' Forum cover story), is absolutely essential for safeguarding the global commons, which make the earth habitable for the present and future generations. Worse, higher yielding seeds are quickly adopted by farmers because of which more than 80 per cent of most crop production comes from a handful of varieties in each crop type.

Much of India's efforts to safeguard species and genetic diversity remain limited to safeguarding a few remaining natural ecosystems like forests, while biodiversity and varietal mono-culture in cropped land areas are wilfully ignored. Growing ecologically unsuitable crops in specific ecosystems is literally killing the planet.

For decades, the establishment makes budgetary allocations on food when discussing the quantum of agriculture subsides. This is a completely unacceptable approach to food subsidies that are targeted at consumers and also keep farmers from receiving higher farm-gate prices. The focus must visibly shift to behavioural economics as demonstrated by the Swatch Bharat Abhiyan thinking.

Photo: Dinodia

The farming scenario too needs investment in billions in a decade-long awareness campaign to reduce the wastage and loss of food, change consumer preferences while weaning farmers on more ecologically sustainable practices and creating platforms to make all this happen. The sustained Swatch Bharat awareness campaign provides a good template.

There has been a steady but subtle shift in the narrative; from agriculture to food, from yield to sustainability, from productivity to prosperity and from quantity to quality. These changes are leading to policies being formulated where farmers are to be supported rather than agriculture production being subsidized by schemes like PM Kisan.

The alternative approaches require a major change of mindset and a paradigm shift to design a new food ecosystem based on agro-ecology principles, requiring different kinds of crop planting practices, mechanization and aggregation of commodities. A discerning shift from supporting costs of farm inputs and farm-gate prices to paying for ecosystem services is the ideal way forward. The problem is with policy-makers' myopic outlook that discourages them from believing that it is really feasible. The added obstacle comes in the form of corporate commoditization of the food system that will not allow it.

Additionally, resources are predominantly channelled into creating infrastructure, which turned out to be a far more appealing proposition for politicians eager to showcase physical progress on the ground. Bureaucrats and retired technocrats turned consultants can justify deploying funds to create physical assets based on standard measurement metrics. This also provides them with an opportunity for receiving hefty fees. It is easy money for contractors and financers and no one is quite worried about the next generation that has to repay with interest.

Entrenched vested interests seem to have rigged the system making it easier to discuss a new approach to the food system than to implement one. This does not have to be so. Allocation of adequate funds and close monitoring of their use while implementing the policies may well change the trajectory of developments in the field of Indian agriculture. If they do not, one might face a night without end.

Regrettably, there seems to be no one with Tolstoy's stature and communications skills to convince the country that it can choose to either have the best of time or the worst of times. The choice is for India to make.

ALLOCATING ADEQUATE FUNDS AND CLOSE MONITORING THEIR USE WHILE IMPLEMENTING THE POLICIES CAN CHANGE THE TRAJECTORY OF DEVELOPMENTS IN THE FIELD OF INDIAN AGRICULTURE. IF INDIA DOES NOT, IT MIGHT FACE A NIGHT WITHOUT END

Ajay Vir Jakhar
Editor
twitter: @ajayvirjakhar
blog: www.ajayvirjakhar.com

# To the Editor

## Listen to the President

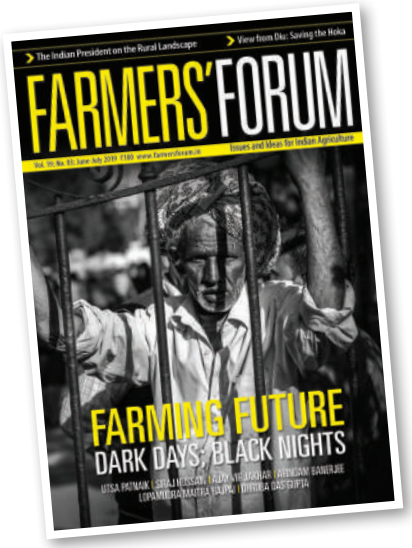
How does one align the position of the President of India on the rural situation and the reality of the ground, being driven by the policy-makers. Your report, 'The Indian President on the rural landscape' (Farmers' Forum June-July 2019) quotes him as having said: "Only on the foundation of a strong rural economy, it is possible to build a strong national economy. Our farmers are the pillars of rural economy. All possible efforts are being made by the central government to provide adequate assistance to the States for agricultural development." How is it that the position of the head of the country is so sadly disregarded by the government and why is the rural sector in such disarray?

**Manish Malhotra**
*Varanasi, Uttar Pradesh*

## India Needs Unique Strategy

Utsa Patnaik is bang on in "Agrarian Crisis: Historical Perspective and Current Realities" (Farmers' Forum June-July 2019) saying: "perish the thought that India can be developed and industrialized in the same way that the advanced countries were. India must find a solution within its own economy". Indeed, India must do things the Indian way, keeping in mind its huge diversities in terms of income and agro-climatic zones. She is also right when she says that India "should give up free trade that hurts farmer incomes and set up a system of protection before it can implement minimum support price".

**Rajender Arora**
*Akola, Maharashtra*




## The Farmer as a Fool?

Apropos of your editorial "Dropping the ploughshare on one's feet" (Farmers' Forum June-July 2019), I entirely agree with your position that "the poll results validate the belief that it is very simple to distract the Indian agriculturists from livelihood issues, even as a precarious future awaits them". In our country, it is very easy to make fools of the people, especially like farmers even though they are the backbone of the nation. This is very sad but – even as a farmer – I fail to understand how we can change things.

**Pawan Kumar**
*Sonipat, Haryana*

***Farmers' Forum*** **website www.farmersforum.in provides free access to all editions for a comprehensive understanding of Indian farmer concerns**

## Long Live Women's Power

It is very interesting to know about the success of Amar Khamar in Dhruba Das Gupta's article under Greenfingers, 'Harnessing women power to consolidate organic footprint: Revisiting Sundarbans' Amar Khamar' (Farmers' Forum June-July 2019). This group created by a small group of women's in the Sundarbans, West Bengal, exemplifies what women can achieve with a little professional help and organization to support them. The confidence of the women comes through so clearly in the statement of Pramila Mondal of Nari Kalyan: 'The money we earn from Amar Khamar has increased the respect our families have for us and we also know our rice is well-received in Kolkata. This gives us a sense of identity that we never have experienced before. Also, today I have an equal say on the spending the money that I earn". Their accomplishment should be shared with every women-driven enterprises.

**Sachin Jain**
*Bhopal, Madhya Pradesh*

## Super Hoka

What a delightful portrait, Lopamudra Maitra Bajpai has painted in her article under Conservation, 'View from Diu: Saving the Hoka' (Farmers' Forum June-July 2019). God bless Ramesh Raval and I do hope the conservation efforts around Hoka pay off and this amazing palm survives forever.

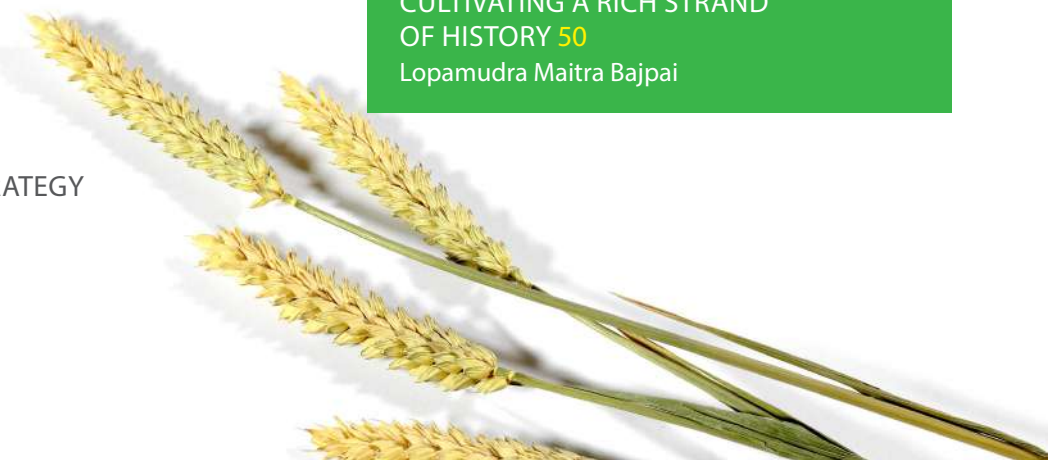
**Mithun Biswas**
*Kolkata, West Bengal*

# CONTENTS

# FARM CRISIS AND THE AGRO-BIODIVERSITY SOLUTION 08

A Farmers' Forum Report





COVER STORY

# Farm Crisis and The Agro-biodiversity Solution

## *A Farmers' Forum Report*

(Based on Agrobiodiversity Index Report 2019: Risk and Resilience)

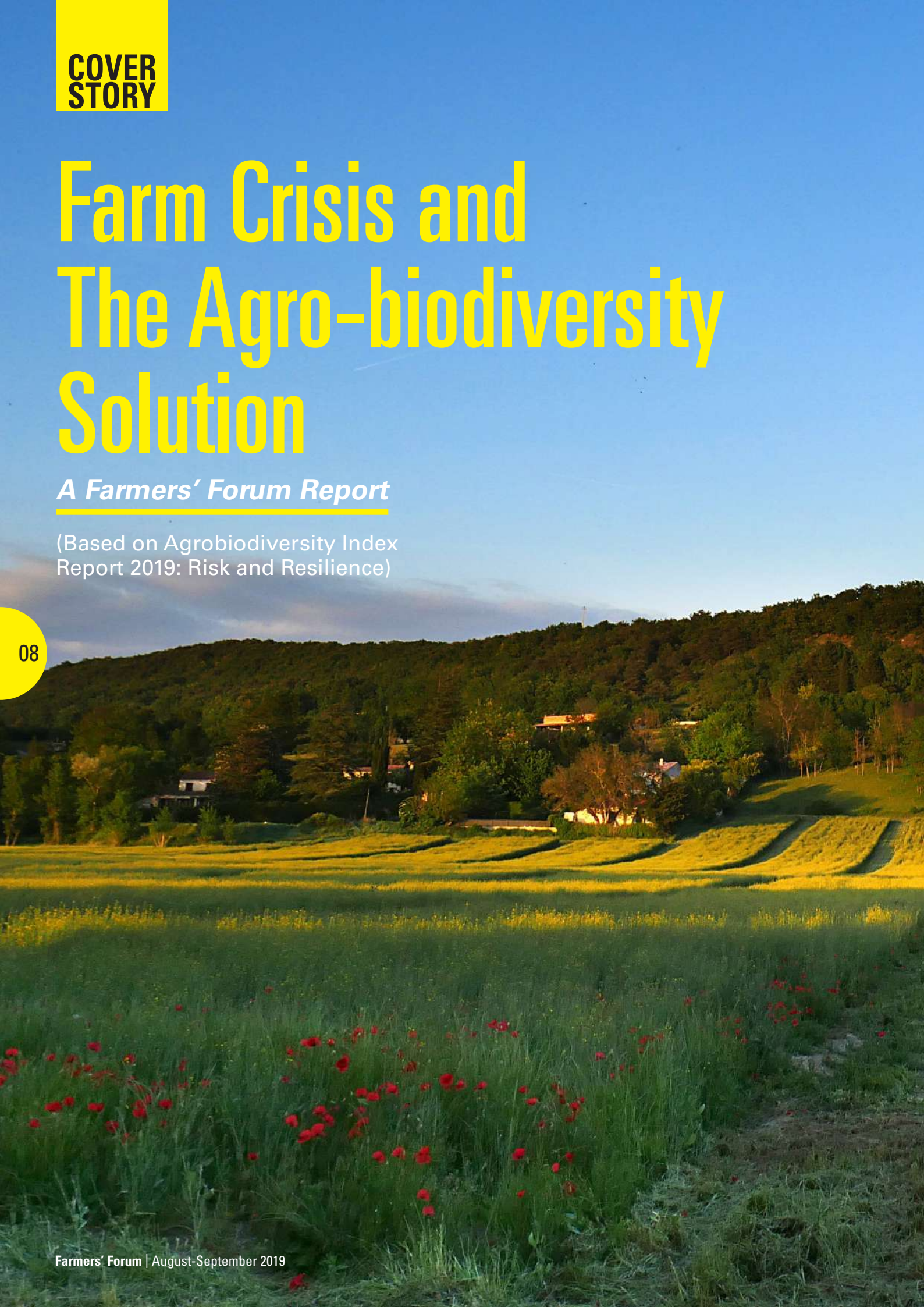


Photo: Pixabay

Global risks vis-à-vis agriculture are a clear and present danger given extreme weather events, possible failure of climate-change mitigation and adaptation measures, loss of biodiversity and ecosystem collapse, from which follows food crisis.

Agro-biodiversity – the subset of biodiversity, both domesticated and wild, which contributes in one way or another to agriculture and food production – is a green, renewable resource that can help global efforts to stop the emergency and transform to more sustainable and nutritious food systems. It is, therefore, of immense concern to all farming stakeholders.

Agro-biodiversity-based practices are at the heart of production systems that deliver not only on productivity but also on environmental health. Agro-biodiversity is also the source of dietary diversity, which can ensure adequate nutrient intake. The first 'Agro-biodiversity Index report 2019: risk and resilience' published by Bioversity International, CGIAR, a global research partnership for a food-secure future (www.cgiar.org) points out that using agro-biodiversity in production systems can help reduce many of these risks.

The index is based on a sample of 10 countries and uses the lens of agro-biodiversity to connect genetic resource conservation to sustainable production in farms and landscapes and to dietary diversity on the plate for better nutrition. The countries span major continents and cover a large diversity of agro-ecological and socio-economic settings.

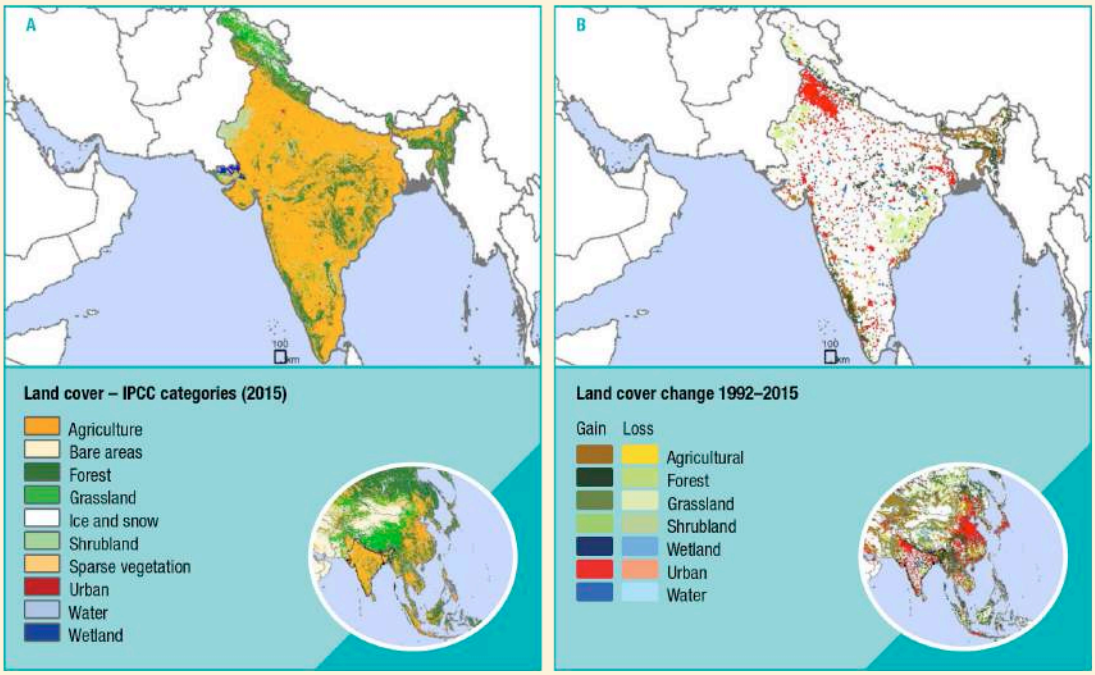
The India agro-biodiversity story, (detailed report Page 15) shows significant risks from rapid population growth and urbanization, pollution, invasive species, unsustainable use of natural resources, climate change, pests and diseases, amongst others.

The Index is an "action-oriented tool" that countries, companies and investors can use to assess their sustainable use of agro-biodiversity for improving food systems and identify areas where they can take action to make diets, markets and production systems healthier, more resilient and more sustainable, the report says.

Farmers with a portfolio of species and, further, within-species, and those with diversity on farm are better equipped to withstand or recover from extreme weather events. Crop



**Figure 1: Major land use (A) and changes in major land use (B)**

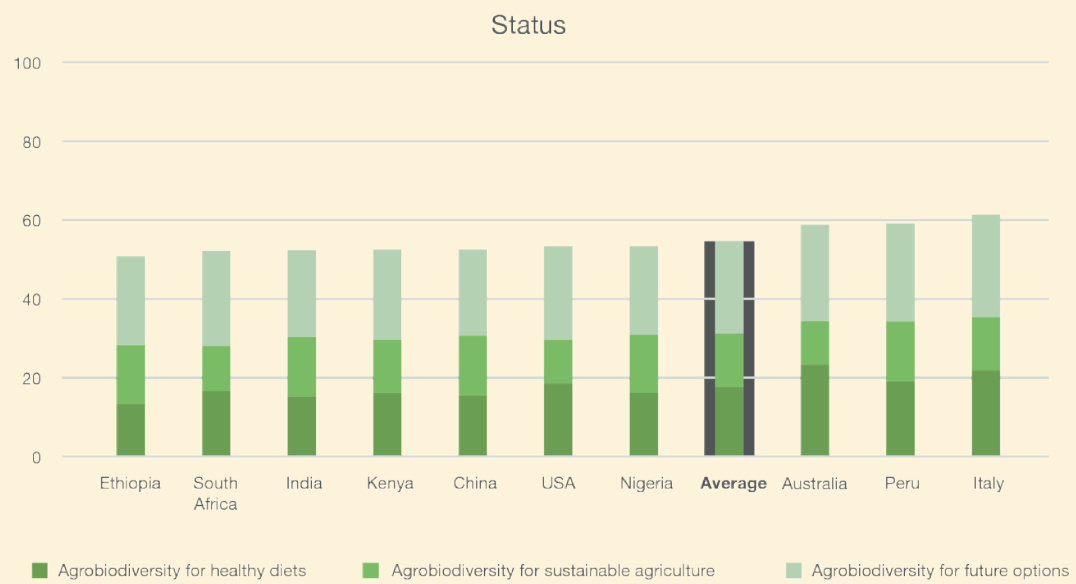



Source: Adapted from: A) European Space Agency, 2017;[1] B) Nowosad, et al., 2019.[2]

1 European Space Agency (2017). European Space Agency Land Cover CCI Product User guide version 2.0. Technical report Year 2015. Available at: https://maps.elie.ucl.ac.be/CCI/viewer/download/ESACCI-LC-Ph2-PUGv2_2.0.pdf

2 Nowosad, J., Stepinski, T. F., Netzel, P. (2019). Global assessment and mapping of changes in mesoscale landscapes: 1992–2015 in Science Direct, Volume 78, pp 332-340. Doi: https://doi.org/10.1016/j.jag.2018.09.013

**Figure 2: Overall status score for the 10 countries. Average: 55/100**




Note: All scores are scaled from 0–100

genetic diversity helps adapt to changing climates and can to mitigate climate change by capturing carbon in trees and biodiverse soils. Using agro-biodiversity – from genetic to ecosystem level – produces a web of interactions, which make ecosystems more resilient.

Resilience, however, is not a final state but an active ability to manage shocks so that, at the very least, one can regain what one originally had. Ideally, it goes beyond simply maintaining the status quo to develop the ability to adapt flexibly to change and to trigger transformative changes that make communities fundamentally less vulnerable to shocks. The Index measures aspects of risk and pinpoints areas where governments can intervene to increase resilience and uses a diversity of competence to suggest possible routes to mitigate risk and build resilience.

The index denotes three pillars of agro-biodiversity:

- Pillar 1: Agro-biodiversity in markets and consumption for healthy diets
- Pillar 2: Agro-biodiversity in production for sustainable agriculture
- Pillar 3: Agro-biodiversity in genetic resource management for future options

"The Agro-biodiversity Index development and implementation takes a design approach... (it) will continue to evolve and improve, as more information, datasets and analytical work can be undertaken. For example, we will integrate

## Farmers with a portfolio of species and, further, within-species and those with diversity on farm are better equipped to withstand or recover from extreme weather events

data and analyses from Bioversity International's Alliance partner, the International Center for Tropical Agriculture (CIAT), to enhance the Index robustness and resolution. Learning from the current applications of the Agro-biodiversity Index to countries (and later companies) will allow us to enhance the framework and will provide incentives to those measured to provide access to key data that can improve the results over time. Feedback will be used to further upgrade the tool and the country profiles and to expand the application of the Index to other countries", says. Juan Lucas Restrepo, Director General, Bioversity International, CEO-Designate, Alliance between Bioversity International and CIAT.

Access the full version of the Agro-biodiversity Index methodology report version 1.0 and its data sources at: https://www.bioversityinternational.org/abd-index/

## Why An Agri-biodiversity Index

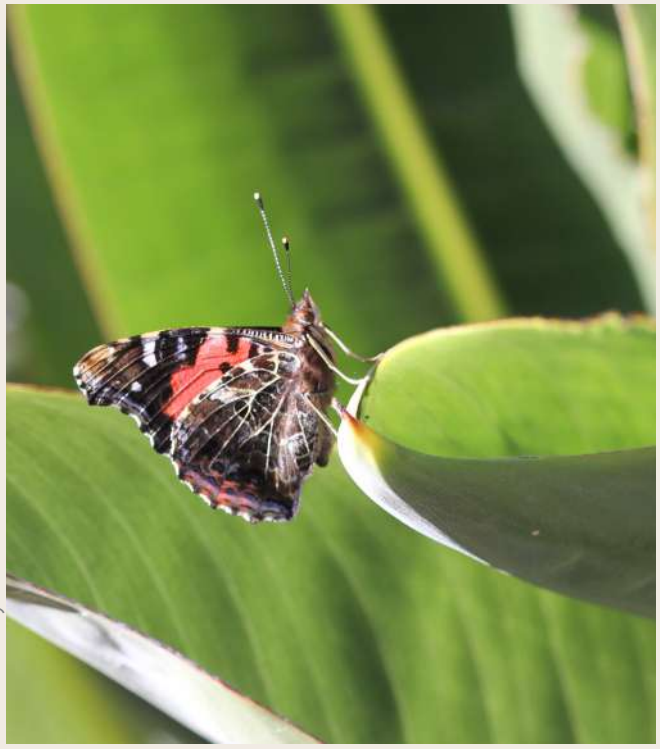
Global food production is the single largest driver of environmental degradation and biodiversity loss (1). Rising global food demand and limited arable land are pushing us to expand agricultural frontiers and increase production. This often happens without regard to the environment, causing biodiversity loss and land and water degradation (2).

Climate change is also a major cause of biodiversity loss. Higher temperatures are already disrupting pollination and natural pest control, affecting the quality of food (3). In many of the poorest regions of the world, climate change will reduce crop yields and increase the incidence of animal diseases, leading to higher food prices – up to even 84 per cent by 2050 – and food insecurity for farmers (4).

At the same time, the need to feed an additional two billion people by 2050 is tempting us to increase yields of a few staple foods, which in turn is eroding food diversity and genetic resources. Today, of the 6,000 plant species cultivated for food, fewer than 200 make major contributions to food production globally, regionally or nationally. Only nine of these plants account for 66 per cent of total crop production (5). Livestock and fish biodiversity are also at stake. Of the 7,745 local breeds of livestock still in existence, 26 per cent risk extinction. In addition, nearly a third of fish stocks are over shed and a third of freshwater fish species assessed is considered threatened (5).

Biodiversity loss in our food systems leaves farmers with fewer options to deal with risks of crop failure, declining soil fertility or increasingly variable weather (2). This is already causing production losses, increasing food insecurity and malnutrition. More than 820 million people still suffer from hunger and many more consume an unhealthy diet that contributes to premature death and disease, with about two billion people lacking one or more essential micronutrients and just under two billion obese or overweight (sometimes the same people) (1, 6).

The way we produce and consume our food is clearly hurting both people and the planet. Business as usual is not working and it is time for a paradigm shift. What we need is to be able to produce and consume more diverse and nutritious foods while having minimal impact on the environment, promoting a sustainable food system. This calls upon all of us, from governments to producers and consumers, to prioritize biodiversity and support actions that protect, foster and mainstream it.



Photos: Pixabay

What actions do we need to put in place to make change happen? To answer this question, we need to be able to measure biodiversity in food systems. While decades of efforts have advanced our understanding of sustainable food systems, agro-biodiversity data remain uneven and often information is analyzed from sectoral perspectives (such as production, consumption or conservation). To transform food systems, we need to look at the broader picture and understand the systemic linkages between biodiversity, food security and nutrition, agricultural production and the environment.

Agricultural biodiversity is essential for building sustainable and resilient food systems. Agro-biodiversity – the wealth of plants, animals and micro-organisms used for food and agriculture – boosts productivity and nutrition quality, increases soil and water quality and reduces the need for synthetic fertilizers. It also makes farmers' livelihoods more resilient, reducing yield losses due to climate change and pest damage. Broadening the types of cultivated plants is also good for the environment, increasing the abundance of pollinators and beneficial soil organisms, and reducing the risk of pest epidemics.

The importance of biodiversity for food and agriculture is widely recognized at the global level. From the 2030 Agenda for Sustainable Development, to the United Nations Framework Convention on Climate Change and its Paris Agreement, the United Nations Convention on Biological Diversity and the United Nations Convention to Combat Desertification, all the main international agreements embed considerations on the role of biodiversity in addressing today's global challenges. International development frameworks are essential to guide and align our actions to conserve and sustainably use biodiversity. However, on their own, political commitments are not enough.

To sustainably use and conserve biodiversity in food and agriculture, we need to go the extra mile. A multi-stakeholder approach such as the one foreseen in the framework of the UN FAO Biodiversity Mainstreaming Platform can be a suitable method to facilitate dialogue among stakeholders and find more coherent and inclusive solutions at country level (7). Governments will need to initiate dedicated, multi-sectoral and evidence-based policies and interventions that integrate agro-biodiversity as a strategy to address today's global challenges. Public-private partnerships will also be needed.

From smallholder farmers to multinational companies, food producers are becoming increasingly important in conserving genetic resources and adopting sustainable agricultural practices. Consumers will need to become more aware of the impact of their food choices on the planet and their role in preserving the environment.

While evidence shows the potential of agro-biodiversity for resilient and sustainable food systems, translation of this knowledge into policy and investment decisions has been tenuous. One of the reasons is multiple ways of measuring agro-biodiversity for multiple goals.

Bioversity International has developed the 'Agro-biodiversity Index' to address this as an innovative tool that, crossing disciplinary boundaries, brings together existing measures and data on diets and markets, production and genetic resources, analyzing them under the lens of agricultural biodiversity for multiple goals (8).

The Index can also help monitor global development goals and targets related to agricultural agro-biodiversity. The 2030 Development Agenda makes an ambitious call for a transformation in food and agriculture systems: it insists on an integrated and holistic approach to sustainable use of natural resources, including natural capital, biodiversity and ecosystem services. "The Agro-biodiversity Index supports progress towards Sustainable Development Goals 3, 12, 13 and 15 and Aichi Biodiversity Targets 7 and 13".

The Index addresses this information gap and makes these interactions more visible. This information will, therefore, constitute solid policy and management guidance to decision-makers. The tool provides insights into how biodiversity, at every level from genetic to ecosystem, is a driver that influences food systems sustainability and, as such, how it needs to be considered and integrated into national and regional environmental, agricultural, health and food research infrastructure, strategies and policies.

By accessing open data on food and agriculture, the tool allows biodiversity trends in food systems to be understood and monitored. In particular, it helps food systems actors to measure agro-biodiversity in selected areas or value chains, and understand to what extent their commitments and actions are contributing to its sustainable use and conservation. The Index equips food system actors with the data needed to make informed decisions to achieve sustainability and resilience and countries can use it in different ways.

- First, they can use it to assess risks in food and agriculture related to low agro-biodiversity. Based on the Index results, countries can understand how much they can build resilience for six risk areas by leveraging agro-biodiversity: malnutrition, poverty trap, climate change and variability, land degradation, pests and diseases and biodiversity loss.
- Second, they can use the information generated through the Index to plan interventions and formulate evidence-based policies and strategies that efficiently address today's global challenges – including malnutrition, climate change and natural resource degradation. Despite its importance, the majority of the interactions between biodiversity, ecosystem services and the agricultural sector are invisible in established informational systems – including the quantities and respective prices of food and agricultural trade, markets and supply and demand.
- Third, the Index results allow countries' performance related to use and conservation of agro-biodiversity to be compared. This can stimulate positive competition to improve performance related to maintaining and enhancing agro-biodiversity. Not only can the tool stimulate a race to the top but it can also foster knowledge exchange among countries, including South-South Co-operation, by identifying best practices to sustainably use and conserve agro-biodiversity.
- Last but not least, the Index can help countries leverage investments for sustainable and resilient food systems. With almost $162.5 billion green bonds issued in 2017, the world is getting serious about protecting and preserving our planet. Countries can apply the Index to demonstrate the value for money of their agro-biodiversity-themed green bonds.

In particular, green bond issuers can use the Index to produce a baseline assessment of the status of agro-biodiversity in specific areas where they plan to implement an intervention financed through the bonds and to monitor progress once the intervention is implemented.

## References


1. Willett W, et al. (2019) Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. The Lancet 393(10170):447– 492.
2. Bioversity International (2017) Mainstreaming Agrobiodiversity in Sustainable Food Systems: Scientific Foundations for and Agrobiodiversity Index (Bioversity International, Rome, Italy).
3. FAO (Food and Agriculture Organization) (2017) The Future of Food and Agriculture: Trends and Challenges (Rome, Italy).
4. World Economic Forum (2017) Shaping the Future of Global Food Systems: A Scenarios Analysis (Geneva, Switzerland).
5. FAO (Food and Agriculture Organization) (2019) The State of the World's Biodiversity for Food and Agriculture; eds Belanger J, Pilling D (FAO Commission on Genetic Resources for Food and Agriculture Assessments, Rome, Itlaly) Available at: *http://www.fao.org/3/CA3129EN/CA3129EN.pdf.*
6. FAO, IFAD, UNICEF, WFP, WHO (2018) The State of Food Security and Nutrition in the World in 2018. Building climate resilience for food security and nutrition.
7. FAO (Food and Agriculture Organization) FAO Biodiversity Mainstreaming Platform | Biodiversity | Food and Agriculture Organization of the United Nations. Available at: http://www.fao.org/biodiversity/mainstreaming-platform/en/[Accessed April 30, 2019].
8. Bioversity International (2018) The Agrobiodiversity Index: Methodology Report v.1.0 (Rome, Italy).

# Agro-biodiversity: The India Story

Photo: Dinodia

India is the world's largest producer of milk, pulses and jute and the second largest producer of rice, wheat, sugarcane, groundnut, vegetables, fruit and cotton. It is also one of the leading producers of spices, fish, poultry, livestock and plantation crops. With 60 per cent of total land area, agriculture dominates the Indian landscape.

The agricultural sector provides employment to 45 per cent of the population and contributes 16 per cent of the gross domestic product. India is also one of the world's eight Vavilov centres of origin of cultivated plants, with high genetic diversity for at least 172 domesticated species, including many legumes (such as chickpea, pigeon pea), vegetables (such as eggplant, cucumber), tubers (such as taro, yam), fruits (mango, citron, tamarind), spices and dyes.

The Protection of Plant Varieties and Farmers' Rights Authority of India identifies up to 22 different agro-biodiversity hotspots in the country. Hundreds of species and varieties of crops and domesticated animals have originated here and are the result of thousands of years of farmers' selection and breeding efforts.

## India: Agro-biodiversity Index Results

India scores medium for status of agro-biodiversity. Available genetic resources for future options contribute most to this score, followed by agro-biodiversity in production systems and agro-biodiversity in markets and consumption. This trend highlights the potential to increase sustainable use of available genetic resources.

The progress score, summarizing commitment and actions scores, is also medium. While commitments to enhancing the management of agro-biodiversity across the three pillars are present in different policies, evidence of actions to implement these commitments is low. The progress score indicates an enabling environment for conservation and use of agro-biodiversity that can support public and private investments in agro-biodiversity-based efforts and innovations. However, actions to perform on this commitment are lagging behind.

Compared to the 10-country average scores, India outperforms on progress and in particular on its overall commitment to better managing agro-biodiversity for multiple goals. The status score is just below average.

India hosts one of the world's four largest national gene banks at the National Bureau of Plant Genetic Resources (NBPGR) and more than 400,000 plant accessions are reported in the World Information and Early Warning System (WIEWS) on Plant Genetic Resources for Food and Agriculture.

Only 20 per cent of young children (6-23 months old) in India have a minimum diet diversity. Among adults, the mortality rate attributable to inadequate diets is 310 per 100,000 people. Significant risks to agro-biodiversity include rapid population growth and urbanization, pollution, invasive species, unsustainable use of natural resources, climate change, pests and diseases, the report says.

The India assessment finds two happy facts about India. A commitment to sustainable use and conservation of agro-biodiversity for healthy diets and its species diversity. Yet there are serious areas of shortcomings that indicate that India is not adequately leveraging its agro-biodiversity for healthy diets, amongst others.

## Leading Practices

- Across policies, India has expressed specific commitments to sustainably using and conserving its agro-biodiversity to contribute to healthy diets, sustainable agriculture and current and future options. India has also developed locally adapted food-based dietary guidelines that promote food diversity and has made available national food composition tables at species and, in some cases, variety level.
- India has high scores in terms of species diversity across all three pillars: in markets and consumption, in production and in genetic resource management. This is paired with integrated crop-livestock systems, which characterize about 82 per cent of India's agricultural land. Such integrated systems contribute to more closed and efficient nutrient cycles, soil fertility and crop diversification.

## Areas of Improvement

Only 27 per cent of agricultural land includes at least 10 per cent of natural vegetation, suggesting that integration between agriculture and nature can be improved. For example, there is agro-forestry on only seven per cent of agricultural land. Recognizing this issue, India has adopted a National Agroforestry Policy, backed with a capital outlay of $450 million for four years (2017 to 2020), which is expected to have a positive impact on agro-forestry

and natural vegetation in agricultural land.

India needs to leverage agro-biodiversity for healthy diets. More than 50 per cent of dietary calories in India come from major staples. Legumes and whole grains reach adequate levels but average diets fall short of vegetables, fruits and some animal-based products. "This contributes to 7,149 disability-adjusted life years per 100,000 population, attributable to inadequate diets", the report notes. The high levels of agro-biodiversity resources can help to address this.

India needs to improve genetic resource management practices. While 401,727 plant accessions are stored ex situ and reported in WIEWS, only 0.8 per cent of useful wild plants are conserved ex situ and about 24 per cent in situ.

**Table 1: Overview of the Agro-biodiversity Indicator scores per pillar for India**

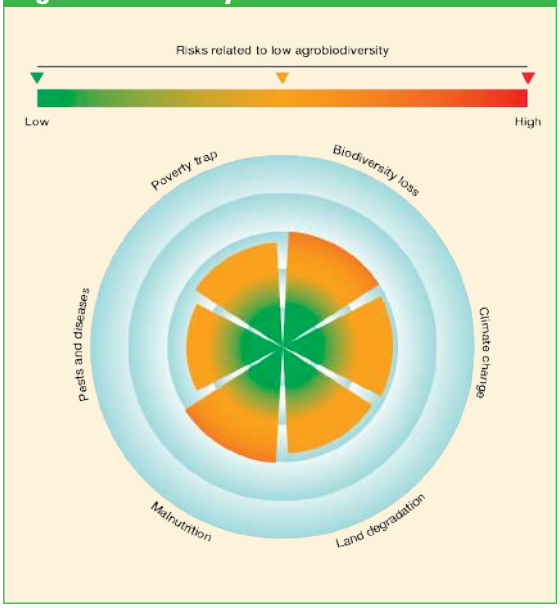
| | | Pillar 1 | Pillar 2 | Pillar 3 |
|---|---|---|---|---|
| | | Agro-biodiversity in markets and consumption for healthy diets | Agro-biodiversity in production for sustainable agriculture | Agro-biodiversity in genetic resource management for future options |
| Commitment | Level of commitment to enhancing consumption and markets of agro-biodiversity for healthy diets | 50 | | |
| | Level of commitment to enhancing production and maintenance of agro-biodiversity for sustainable agriculture | | 57 | |
| | Level of commitment to enchancing genetic resource management of agro-biodiversity for current and future use options | | | 58 |
| Actions | Consumption and market management practices supporting agro-biodiversity | 25 | | |
| | Production practices favouring agro-biodiversity | | 25 | |
| | Production diversity-based practices | | 45 | |
| | Genetic resource management practices supporting agro-biodiversity | | | 19 |
| Status | Species diversity | 79 | 72 | 93 |
| | Varietal diversity | | | 94 |
| | Functional diversity | 14 | | |
| | Underutilized/local species | 43 | | 13 |
| | Soil biodiversity | | 37 | |
| | Pollinator biodiversity | | | |
| | Landscape complexity | | 27 | |

Source: All scores are scaled from 0–100




In India, the majority of dietary calories (57 per cent) come from major grains and health risks attributable to inadequate diets are high

**Figure 1: Increased risks related to low agro-biodiversity levels in India**




## Notable Findings

India is handicapped by its diversified production systems. While the country has invested heavily in agricultural intensification, in general, its agricultural production systems remain diverse in terms of crop and livestock species. More than 10 crops are harvested on an annual basis on 66 per cent of India's agricultural land. There is also strong crop-livestock integration, as observed on more than 80 per cent of India's agricultural land.

Out of 122 crops with global datasets, 80 – about 65 per cent – are reported to be harvested in India. Despite the relatively high species diversity in production and supply, the majority of dietary calories (57 per cent) come from major grains and health risks attributable to inadequate diets are high. The report says that there is potential to leverage the vast amount of agro-biodiversity to help improve dietary quality in the country.

Recognizing the degradation of soil quality as a result of excessive use of agrochemicals, inappropriate agricultural practices, climate change and repeated floods among other causes, the Indian government established the National Bureau of Agriculturally Important Micro-organisms in 2001 and has a strong commitment to improving soil health and soil biodiversity.

While there is a lack of global statistics on home gardens and related agro-biodiversity, studies in

India indicate home gardens are an important and widespread practice supporting farmers' agro-biodiversity, the report suggests.

## Risk Assessment

India's agro-biodiversity status and limited actions to manage agro-biodiversity lead to relatively high levels of risks across all six areas. This is partly explained by the low scores for actions in support of sustainable use of agro-biodiversity. Contributing to the particularly high risk for malnutrition is the large proportion (57 per cent) of dietary calories provided by staples. The high number of disability-adjusted life years is attributable to dietary risks (7,149 per 100,000 in 2017) related to diets that are too low in healthy foods (such as fruits, vegetables, legumes, whole grains, nuts) or too high in unhealthy foods (such as sugar-sweetened beverages, processed meat).

Contributing to the high risk of biodiversity loss is the low score for the comprehensive conservation of useful wild plants: only 0.8 per cent of useful wild plants are adequately conserved ex situ and 24.3 per cent in situ.

This highlights the role of resilience building to reverse the risk assessment. The existing agro-biodiversity and related actions and commitment have to be focused on build resilience to various risks. The report notes that "current agro-biodiversity management in India contributes most significantly to managing risks related to pests and diseases".

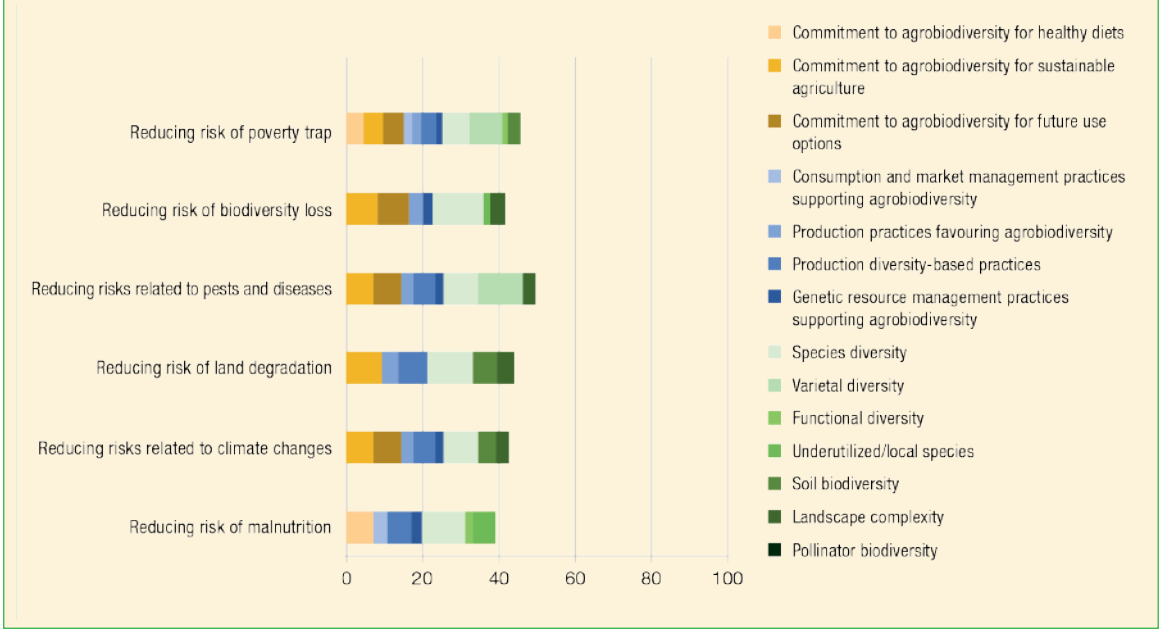
India's agro-biodiversity status and limited actions to manage agro-biodiversity lead to relatively high levels of risks. This is partly explained by the low scores for actions in support of sustainable use of agro-biodiversity

## Spatial Trends

In India, only 27 per cent of agricultural land contains a minimum of 10 per cent of natural or semi-natural vegetation, suggesting that there is little integration of agriculture with the surrounding environment. "A minimum percentage of natural or semi-natural vegetation in agricultural landscapes is important to provide ecosystem services such as pollination, soil fertility, water retention and biodiversity habitat", says the report.



**Figure 2: Contributions of Agro-biodiversity Index indicators to resilience building in India**



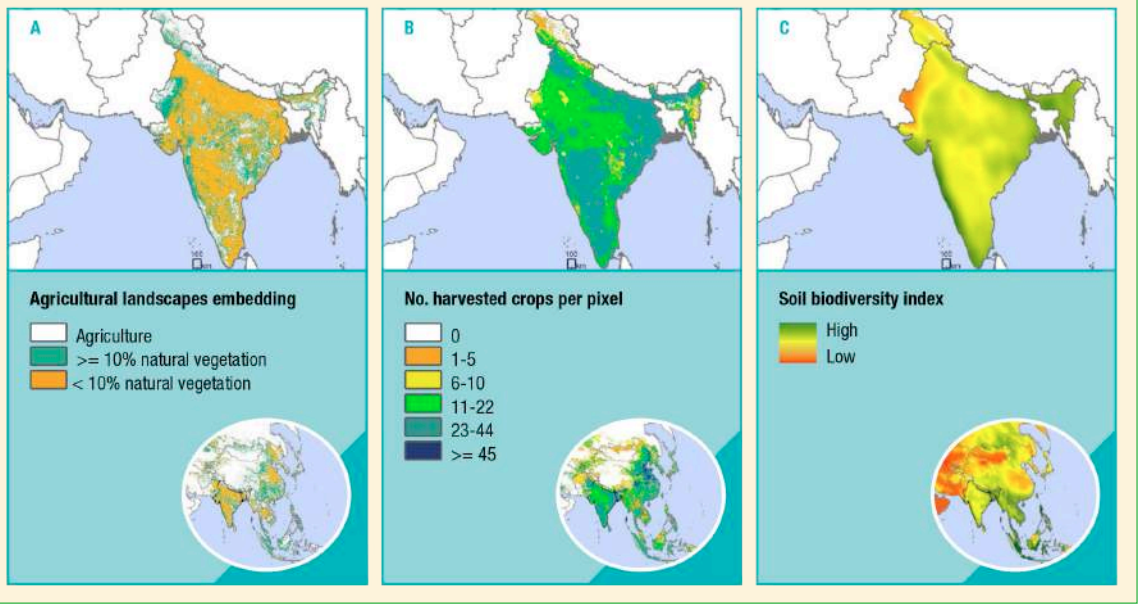

Note: All scores are scaled to a maximum of 100. Colours indicate relative scores of individual agrobiodiversity indicators that contribute to building resilience for that specific risk area. No data available for pollinator biodiversity.

**In India, the increase in species diversity from 2000 to 2005 could be explained by improved commitments in agricultural policies to enhancing conservation and use of agro-biodiversity, while recognizing some of the tradeoffs of the grain-focused Green Revolution. However, this increase levels off around 2005 and declines slightly again more recently**



Photo: Dinodia

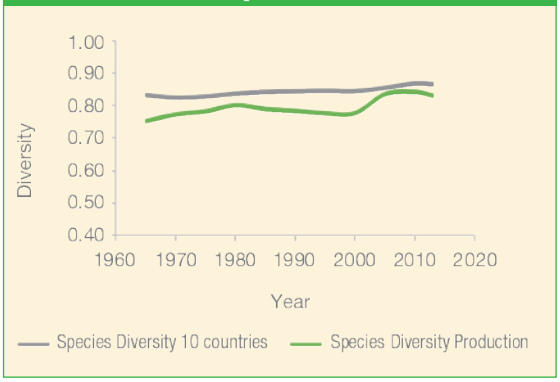
**Figure 3: Spatial trends in agro-biodiversity indicators for sustainable agriculture, including A) agricultural land with >10% natural or semi-natural vegetation; B) number of harvested crops per pixel, and C) soil biodiversity index**




Source: Adapted from: A) European Space Agency, 2017; B) Monfreda et al., 2008;[1] C) European Soil Data Center, 2016.[2]

Management of natural land within agricultural landscapes is strongly encouraged for agricultural and environmental sustainability. It is, therefore, very promising that India has adopted a National Agroforestry Policy since 2014 and it will be important to monitor changes in agro-forestry and natural vegetation in agricultural land as the policy is implemented.

**Figure 4: Temporal trends in species diversity in production in India (Shannon diversity index)**




Source: FAO[3]

India is highly diverse with diversified production systems found across the country. More than 10 crops are harvested on an annual base across seasons, with some exceptions in areas in Rajasthan, Chhattisgarh, Himachal Pradesh and Uttarakhand where crop diversity is lower. Risks for low soil biodiversity are observed across the country but particularly in the northwestern areas of Rajasthan and Punjab.

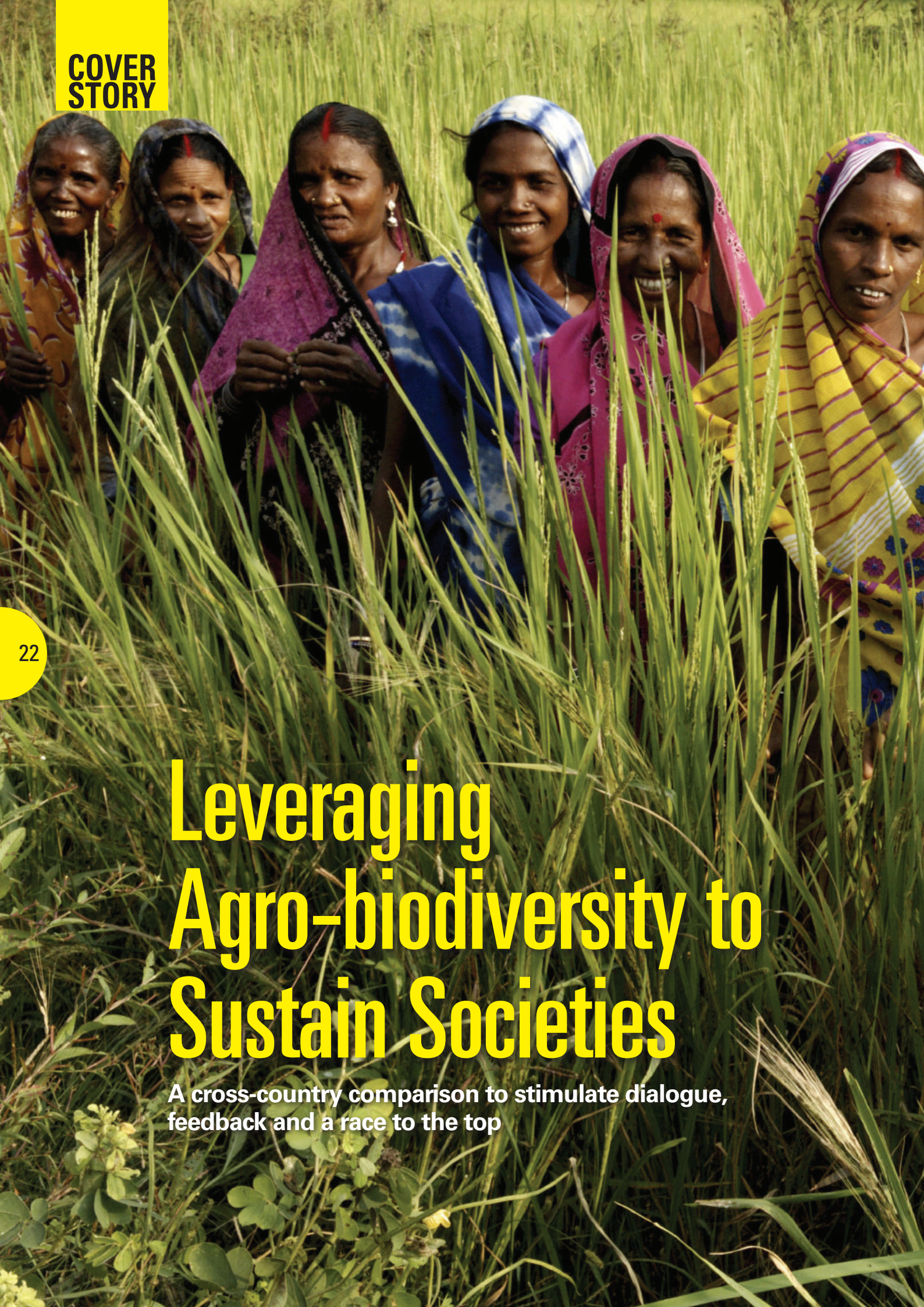
## Temporal Trends

Species diversity in production in India has generally remained stable from 1965 to 2000, with some peaks in the 1980s. "The increase in species diversity from 2000 to 2005 could be explained by improved commitments in agricultural policies to enhancing conservation and use of agro-biodiversity, while recognizing some of the tradeoffs of the grain-focused Green Revolution", the report says. However, this increase levels off around 2005 and declines slightly again more recently.

1 Monfreda, C., Ramankutty, N., Foley, J. A. (2008). Farming the planet: 2. Geographic distribution of crop areas, yields, physiological types, and net primary production in the year 2000. In: Global Biogeochemical Cycles, Volume 22, Issue 1. Doi: 10.1029/2007GB002947

2 European Soil Data Center. (2016). "Global Soil Biodiversity Maps" associated with the Global Soil Biodiversity Atlas. Joint Research Centre of the European Commission. Available online at: https://esdac.jrc. ec.europa.eu/content/global-soil-biodiversity-maps-0

3 FAO. 2019. Food Balance Sheets. In: FAOSTAT [Online]. Available at: http://www.fao.org/faostat/en/#data/FBS



# Leveraging Agro-biodiversity to Sustain Societies

**A cross-country comparison to stimulate dialogue, feedback and a race to the top**



Photo: Dinodia

The cross-country analysis seeks to stimulate dialogue and exchange on how to better integrate agro-biodiversity into diets, production and genetic resource management to achieve sustainable and resilient food systems, from local to global and encourage a 'race to the top'. The first agro-biodiversity index does so on the basis of a sample of 10 pilot countries that represent a fairly comprehensive agro-ecological and socio-economic settings: Australia, China, Ethiopia, India, Italy, Kenya, Nigeria, Peru, South Africa and USA.

Higher income countries, such as Italy, Peru, Australia and the USA, tend to do better in terms of current status score but emerging economies, such as India, Kenya and South Africa, are performing better too. In terms of future commitments and actions, the USA, Australia and Italy score quite low (Figure 2) and raise the question about whether lower and middle-income countries will become the future gatekeepers for agro-biodiversity, the report points out.

Across countries, agro-biodiversity is most available in genetic resource management for future options and this pillar contributes most strongly to the overall status score. Countries often score well on one or two pillars but less than well for the other pillar(s). This balances out the differences between countries for the overall status score.

Italy, Peru and Australia are the top three countries when it comes to the status of agro-biodiversity and score relatively highly across all three pillars. Ethiopia, South Africa and India, however, present the lowest status scores among this sample of countries, the report says.

For Ethiopia, this is explained by a particularly low score for agro-biodiversity for healthy diets. South Africa shows a low score in agro-biodiversity for sustainable agriculture, while India presents low scores in agro-biodiversity both for healthy diets and for sustainable agriculture.

A check on progress towards sustainable use and conservation of agro-biodiversity across countries shows that progress scores are relatively low. Despite widespread recognition of the importance of agro-biodiversity, there is often a lack of specific strategies and targets to embed its sustainable use and conservation into nutrition, agriculture, economic development and environmental policies.

As far as actions are concerned, while diversity-based practices and practices that favour agro-biodiversity are present across countries, their scale is often small and related data and monitoring efforts are limited, according to the report.

India, Kenya and South Africa show the highest performance on the progress score, meaning that they have made explicit commitments and have already put in place actions to sustainably use and conserve agro-biodiversity. Australia, USA and Italy, on the contrary, present the lowest scores. Although these are among the top three countries for status, they lag behind when it comes to commitments, actions or both to sustainably use and conserve their wealth of diversity.

"Alignment between commitment and actions is not always clear. Some countries, such as Nigeria, express specific commitments for agro-biodiversity but actions lag behind. Other countries, such as Australia, have no explicit

Photo: Dinodia

## South Africa shows a low score in agro-biodiversity for sustainable agriculture, while India presents low scores in agro-biodiversity both for healthy diets and for sustainable agriculture

commitments related to agro-biodiversity but have actions in place that are considered to favour agro-biodiversity", says the report. While commitment by itself does not change the situation on the ground, it reflects an enabling environment for agro-biodiversity efforts, also for non-governmental and private sector players.

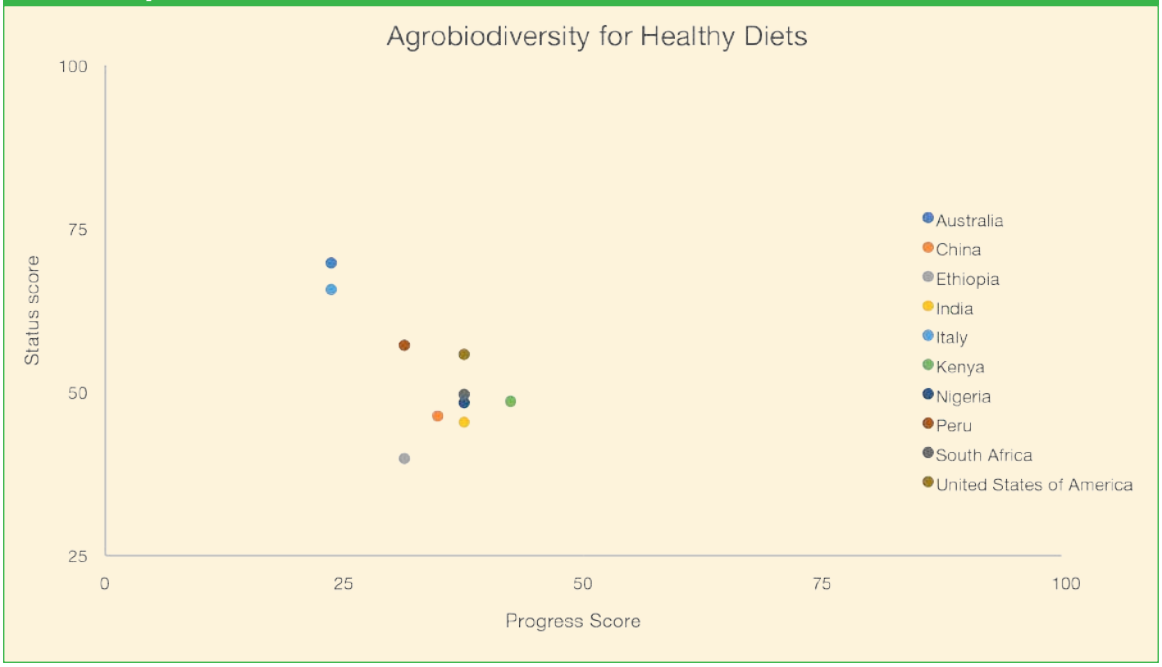
## Findings Across Pillars

### Pillar 1: Agro-biodiversity in markets and consumption for healthy diets

Higher income countries, such as Australia, Italy, Peru and the USA, score best in terms of agro-biodiversity for healthy diets. Emerging countries, for example, Ethiopia, Kenya and India, score lower on the status score but perform better on the progress score with specific commitments and actions to leverage agro-biodiversity for better nutrition (Figure 1).



**Figure 1: Status and Progress scores for agro-biodiversity in markets and consumption for healthy diets across countries**




Note: All scores are scaled from 0–100

Photo: Dinodia

## Higher income countries score best in terms of agro-biodiversity for healthy diets. Emerging countries score lower on status but better with progress score

Italy and Australia stand out in terms of agro-biodiversity in markets and consumption for healthy diets. This is explained by a large species diversity in supply systems (including for fruits, vegetables, legumes, nuts and seeds), a large proportion of calories coming from non-staples, and relatively high diet quality (using DALYs, disability-adjusted life years, a proxy for diet quality). The progress score for sustainable use of agro-biodiversity for healthy diets in these countries is, however, rather low.

Leveraging the large diversity of available vegetables, fruits, nuts and seeds can help tackle the health risks related to diets too low in those food groups and too high in processed and red meat, and sugar-sweetened beverages.

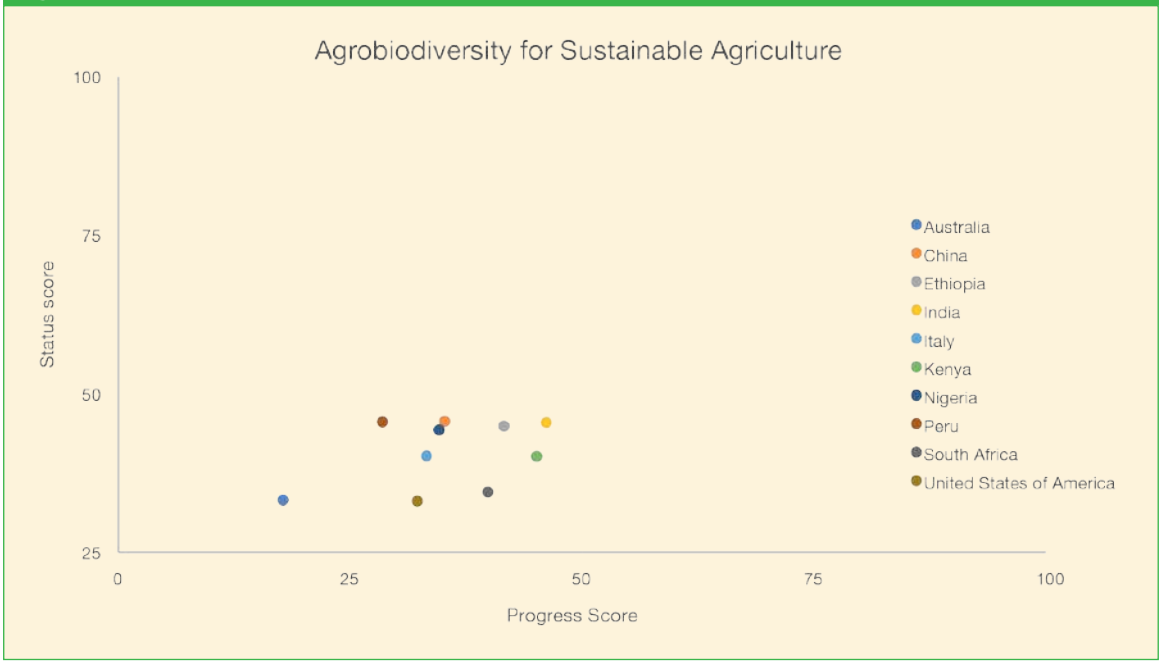
### Pillar 2: Agro-biodiversity in production for sustainable agriculture

The presence of agro-biodiversity in sustainable agricultural production systems is the highest in China and Peru (Figure 2). This is mainly explained by the presence of rich species diversity per land unit in China and strong integration of natural vegetation in agricultural land in Peru.

Countries with more industrialized agriculture and large-scale farming, such as Australia, South Africa and the USA, score low on agro-biodiversity for sustainable agriculture. This is explained by large-scale intensification of mainly one or two crops or livestock species. Such monoculture systems increase the vulnerability of the agro-ecological systems to climate change, pests and diseases, and land degradation.

Countries greatly differ in terms of their progress score for sustainable agriculture and it will be of interest to compare their various paths moving forward. "India, Ethiopia and Kenya show a more explicitinterestinagro-biodiversity-basedapproaches and, therefore, present the highest progress score in sustainable production", according to the report.

**Figure 2: Status and Progress scores for agro-biodiversity in production for sustainable agriculture across countries**




Note: All scores are scaled from 0–100

### Pillar 3: Agro-biodiversity in genetic resource management for future options

Agro-biodiversity in genetic resource management for future options is generally high across countries (Figure 3). Most of them have high diversity in the plant samples conserved ex situ. Across the 10 countries, about 1.8 million plant samples are conserved ex situ. Italy and Australia score high on status for this pillar thanks to the rich diversity of crop-wild relatives and useful wild plants found in situ, which means growing in their natural habitats.

In terms of the progress score, India and Peru stand out, presenting strong commitments and actions for both ex situ and in situ conservation.

**Figure 3: Status and Progress scores for agro-biodiversity in genetic resource management for future options across countries**


Note: All scores are scaled from 0–100



# Agro-imperialism and The Indian Farmer

**Pravin Kulkarni**

(Edited version of his report for *Newsclick*)

*https://www.newsclick.in/battling-corporate-concentration-agriculture*

Photo: Dinodia

Representatives of farmer's movements, agriculture networks, academics, researchers and activists gathered in Bengaluru to discuss various aspects of corporate concentration in agriculture and food at a symposium on 'Three decades of neo-liberalism in India and the Corporatization of Agriculture', organized by Focus on the Global South in partnership with Alternative Law Forum and Rosa-Luxemburg-Stiftung South Asia, on June 27-28, 2019.

The presentations covered a range of issues that have cropped up over three decades of neoliberal policies; the farm sector winners and losers under the evolving regime; pricing policy; perspective from farmer's movements; implications of mega mergers; trade and investment deals; corporate control over land, seed and livestock; rise of big tech and online retail; Israeli interventions in agriculture; biopiracy; politics of philanthropic foundations and such others.

In the strategy session, participants agreed that India is witnessing a new phase of corporate consolidation in the agriculture sector with a deepening corporate-state nexus. This demanded a more vigorous response from the farmer's movements. The session focused on 'Strategizing on the Way Ahead: Research and Corporate Accountability Campaigns', with Shalmali Guttal (Focus on the Global South) moderating the discussions. The panelists included:

- TVS Sellamuthu, South India Coordination Committee for Farmers Movements
- Chukki Nanjudaswamy, Karnataka Rajya Raitha Sangha (KRRS)
- Krishna Prasad, All India Kisan Sabha (AIKS)
- Kavitha Kuruganti (ASHA)
- Dinesh Abrol, The Nation for Farmers, amongst others (see box for full list of speakers)

Farmer leaders, civil society activists, academics and researchers participated in a symposium on Corporate Concentration in Agriculture and Food, where they focused on the changing nature of the state, following the neoliberal reforms in the 1990s. This included the increasing corporate control over different components of agriculture such as seeds, fertilizers and technology through Intellectual Property Rights; land grabs to profit from real estate speculation; and the use of different trade agreements to capture and rig markets in the global south.

The final session that followed these discussions was dedicated to charting the way forward for peasant movements and civil society to resist corporate capture and to reverse the worsening plight of the peasantry. One of the key demands of peasant organizations

"Traditionally in India, seed... was not different from agricultural production itself". Today, it is not merely a single input but "an input which brings a whole package of practices with it"

— Kavitha Kuruganti,
Alliance for Sustainable and Holistic Agriculture




## Over two decades, more than 300,000 farmers have committed suicide, mostly due to indebtedness; an average of 2,000 peasants have been quitting full-time agriculture every day

undertaking several mass agitations in 2018 was for a three-week long special session in the parliament, exclusively dedicated to discussing the agrarian crisis, which the government at the centre has not paid heed to.

Panelists and participants, therefore, agreed on the need to begin preparations to mobilize to demand a special legislative sessions to discuss the agrarian crisis in states not ruled by the Bharatiya Janata Party (BJP). Such states comprise a significant force in the country, given that 12 of the 29 states in the country are still ruled by non-BJP governments. During peasant agitations, 21 political parties, including those ruling these 12 states, had expressed their support for a special legislative session.

Over the last two decades, more than 300,000 farmers have committed suicide, mostly due to indebtedness. In the same period, an average of 2,000 peasants have been quitting full-time agriculture every day. Industry, on the other hand, has not been growing at a rate that can absorb significant numbers of these people. This has pushed millions into a precarious existence.

The nature of the challenges facing the agrarian economy has been changing at an increasing pace since the neoliberal reforms. Post-independence, the biggest agrarian challenge was that a small landholding class owned a majority of the land and capital was required for cultivation. Half-hearted land-reforms by different states had failed in most parts of the country and the problem remains largely unresolved.

As of 2016, around 86.2 per cent of the peasantry is in the category of small and marginal farmers, with land-holdings less than two hectares. This large section together owns a only 47.3 per cent of cropped area, while the remaining 52.7 per

## SPEAKERS AT THE SYMPOSIUM ON

### THREE DECADES OF NEO-LIBERALISM IN INDIA AND THE CORPORATIZATION OF AGRICULTURE

**Moderator: Shalmali Guttal (Focus on the Global South)**

- Withdrawal of the state, deepening neoliberalism and financialization in Indian agriculture: winners and losers – Aparajita Bakshi (National Law School of India University)
- Rise of corporate power in agriculture and response of farmers' movements – P. Krishna Prasad (All India Kisan Sabha)
- Corporate control over agriculture pricing – T. N. Prakash (Karnataka Agricultural Price Commission)

### CORPORATIZATION OF SEEDS, BIODIVERSITY, LIVESTOCK AND LAND

#### SESSION 1

**Moderator: Dinesh Abrol (National Working Group on Patent Laws/Nation for Farmers)**

- Corporatization of the livestock sector – Sagari Ramdas (Food Sovereignty Alliance)
- Privatization of seeds and biodiversity – Kavitha Kuruganti (Alliance for Sustainable and Holistic Agriculture)
- How changes in land laws have enabled corporate land grabs – Preeti Sampat (Ambedkar University of Delhi)

#### SESSION 2

**Moderator: Vidya Dinker (Indian Social Action Forum)**

- Data visualization of Land Conflicts and loss of agriculture land and commons – Nihar Gokhale (Land Conflict Watch)
- How International Financial Institutions and Foundations undermine progressive farming agendas for the benefit of big capital – Bhargavi Rao (Researcher)

### HOW CORPORATIONS CAPTURE MARKETS: MEGA-MERGERS, DIGITIZATION AND TRADE AGREEMENTS

**Moderator: S. Kannaiyan (South India Coordination Committee of Farmers Movements)**

- Mega-mergers in agribusiness and the failure of the Competition Commission – Dinesh Abrol (National Working Group on Patent Laws/Nation for Farmers)
- Rise of digital monopolies and implications for food and agriculture – Parminder Jeet Singh (IT for Change)
- Corporate capture of trade agreements – WTO's Agreement on Agriculture, FTAs and BITs – Benny Kuruvilla (Focus on the Global South)

### CASE STUDIES OF CORPORATE INFLUENCE: IN CONTRACT AND NATURAL FARMING AND ONLINE MARKETS

**Moderator: Vinay Sreenivasa (Alternative Law Forum)**

- Biopiracy: corporate exploitation of weak regulatory frameworks – Leo Saldhana (Environment Support Group)
- Corporate complicity: Israeli interventions in Indian agriculture – Apoorva Gautam (Palestinian Boycott, Divestment and Sanctions National Committee)
- Impacts of online portals on hawkers and small retailers: case study from Bengaluru – Shobha SV (Alternative Law Forum)

### STRATEGIZING ON THE WAY AHEAD: RESEARCH AND CORPORATE ACCOUNTABILITY CAMPAIGNS

**Moderator: Shalmali Guttal (Focus on the Global South)**

- TVS Sellamuthu, South India Coordination Committee for Farmers Movements
- Chukki Nanjudaswamy, Karnataka Rajya Raitha Sangha (KRRS)
- Krishna Prasad, All India Kisan Sabha (AIKS)
- Kavitha Kuruganti (ASHA)
- Dinesh Abrol; The Nation for Farmers



cent is held by a small minority of large and medium farmers who make up a mere 13.8 per cent of the farming population.

However, with neoliberal reforms, the nature of the challenge has shifted to the capture by multinational corporations of agriculture and the markets for its produce. The control of agricultural inputs is one of the primary means through which corporations are taking over agriculture. The 'big four' corporations that have emerged out of mergers and acquisitions over the last few years – Bayer-Monstanto, ChemChina-Syngenta, DOW-Dupont and BASF – today control over 70 per cent of the inputs such as fertilizers and commercial seeds.

The very categorization of seeds as an agricultural input is an "insult to seeds", Shalmali Guttal, the executive director of Focus on Global South, said in her opening remarks at the symposium. "Seeds are the very foundation of… farming. But the fact is that in global corporate language … [they are] regarded as an input".

Seeds are bred in a manner that require specific kinds of fertilizers and pesticides to yield results. "In the US Patent regime, if Monsanto is selling a particular seed to a particular farmer, [he or she] is immediately signing a technology agreement, which has clauses related to what chemical, in what dosage and from which company's brand has to be necessarily used with the seed," said Kavitha Kuruganti, Alliance for Sustainable and Holistic Agriculture.

It may or may not all be Monsanto's products. It could even be a different company with which Monsanto has some arrangement. "With seeds, you can control the entire chain if you have patent regime of the kind in the US," Kavita Kuruganti argued. While the patent regime in India does not cater to corporate interests as readily as the one in the US, a handful of corporations are fast expanding the percentage of seed market they have captured.

One of the tools most effectively used by Monsanto to capture the seed market has been the state itself. For instance, 'Project Sunshine' was initiated by Gujarat, then under chief minister Narendra Modi, now the Prime Minister. The company convinced the state government to pay them upwards of $29 million in exchange for tons of its hybrid seeds and related pesticides, which



## Mega-mergers allow companies to establish seed business platforms providing for enhanced vertical integration, for creating exclusive packages of traits, seeds and such others

were distributed free of cost to the indigenous people under a certain scheme initiated in the name of agricultural development.

"Anyone working in agriculture will know that it takes just two to three years for a farmer who does not keep his or her own seeds to become perpetually dependent on external seed sources," Kavitha Kuruganti said. After profiting from the scheme for three years, Monsanto was finally removed from the scheme following a long and sustained struggle by grassroots organizations. However, for these three years, Monsanto had a readymade, state-sponsored market.

Over 34 per cent of the seed market had already been captured by these MNCs prior to the merger of the six large corporations into three. Using this captured market, the companies have ratcheted up the prices by creating an artificial scarcity of seeds by hoarding them and also through such other means as having clauses in the sub-licensing agreements that force distributors to pull the first generation seeds out of the market when Monsanto produces second generation seeds.

Deeming these mergers as 'agro-imperialism', Dinesh Abrol, an academician with expertise in WTO and trade agreements, said that "These mega-mergers are different. Cross-licensing agreements existing among the companies involved in these combines already show that they have no intention to compete with each other. The cartel like behaviour can be expected to prevail in the market. The mega-mergers allow these companies to establish a seed business platform providing for enhanced vertical integration, which will be used for the purpose of the creation of exclusive packages of traits, seeds and agrochemicals that are less likely to interoperate with rival's products". Post combining, the companies "would able to use the market-power… in such a way that farmers are obliged to use the companies' proprietary brands."



After these mergers, not only have these MNCs captured more than 70 per cent of the global seed market but also control about 80 per cent of the private sector R&D investment and agricultural biotechnology-related intellectual property. Besides, they possess large amounts of farm data, which has been collected through their data gathering platforms. This data helps corporations trap farmers into buying the full package of their products, which are "marketed as integrated solutions."

"I am not really sure whether in the milieu of agriculture, I should be more afraid of Syngenta or of Google", Parminder Singh, the executive director of IT for Change, said, provoking thinking on the power of data.

Apart from thus capturing agricultural inputs and the related data, MNCs are also deeply invested all along the value chains. From well-known western corporations such as Walmart, Amazon and such others, to a number of such companies setting up shop in India and other parts of Asia, they are all taking over the processing and branding and extracting the greatest share of the price at which an agricultural commodity is sold.

P. Krishna Prasad, from the left-wing farmers' union, AIKS, explained that globally, a farmer receives no more than an average of 10 per cent of the price of the product in the market. Corporations that control processing and branding, wherein the greatest value addition in the global value chains lies, extract 90 per cent of the value.

The situation is compounded by the number of clauses introduced in various trade agreements, which allow foreign companies to sue the state if it implements policies that affect their profits. India has already awarded $164 million for such claims made by companies. The total amount claimed by foreign corporations is about $12.3 billion, which is half the country's national health budget of 2015, Benny Kuruvilla, India Programme Coordinator of Focus on Global South, said.

Under such circumstances, where corporate control has become the key issue around which the agrarian question revolves, the old methods of mobilizing around the agenda of "land to the tiller" are no longer effective. Left movements have to realize the changed nature of agrarian question and mobilize accordingly, to wrest power from corporations, Krishna Prasad said.

Co-operatives and collective farms could be the way forward to achieving this and successfully challenge corporate power. The size of these co-



## Small dairy farmers in different parts of the country are losing their livelihoods due to competition from Amul and large farmer dominated co-operatives

operatives has to expand beyond the local and regional to national and international scales. Only then, with economies of scale consolidated, can efficient technology be deployed for farming and the high-value addition tasks of food processing and branding be undertaken by the peasantry. Rather than shunning advanced technology, he argued, the technology as well as the R&D that precedes it should be brought under the control of the peasant movement.

Where does all this leave the small farmer? Merely assisting and encouraging the creation and expansion of co-operatives and collectivized farms is no assurance against the squeezing out of small farmers in a neoliberal economy, argued Sagari Ramdas from the Food Sovereignty Alliance. Referring to the dairy and livestock sector, she said that Amul, an Indian dairy co-operative, regarded as a success model to be emulated across the country, "may be a co-operative but it is co-opted."

The transformation since economic liberalization in 1990s has rendered co-operatives unable to "protect the interests of the small and marginal farmers. The co-operative is there for its own profit," she said.

Small dairy farmers in different parts of the country are losing their livelihoods due to competition from Amul and other such co-operatives, which are now dominated by large farmers. This change in the nature of co-operatives is not the case with India alone. "The five top global dairy players are co-operatives but are co-operatives of the large farmers," she said.

Nevertheless, the alternative to corporate takeover has to be in some form of collectivization, Aparijita Bakshi, a development economist at National Law School of India University and an editorial board member of the journal Review of Agrarian Studies, said. "The challenge is in collectivization but the solution is also in collectivization," she said.

Photo: Pixabay



## INDIA 2032: A $10 TRILLION STRATEGY

# Rural Transformation A Critical Key

***A Farmers' Forum Report***

The importance of rural India to the corporate sector features amongst the top concerns in corporate India. In his annual general meeting address to shareholders, the Hindustan Unilever chairman, Sanjiv Mehta, talks of Reimagining FMCG in a Changing India, with a very sharp focus on the need for rural transformation. This report excerpts some highlights of the speech.

A momentum growth rate of seven per cent will take India to a $7 trillion economy by 2032. "If we can bend the growth curve and deliver a consistent growth rate of seven per cent and above, India could transform itself to a $10 trillion economy during this period and catapult itself into the upper echelons of middle-income countries." To realize the $10 trillion vision, however, substantive changes will have to take place especially in a few areas (excerpts pertaining to rural India, MSMEs and environment).

Hindustan Unilever Limited

### Transformation of Rural India

The equation of over 60 per cent of India living in rural areas, with majority of them being dependent on farm-based livelihoods but agriculture and

allied sectors contributing a meagre 16 per cent to the gross domestic product of the country is clearly unsustainable. Harnessing of technology, disintermediation of the value chain and better water management to reduce the over-dependence on rainfall, have huge potential to increase agricultural productivity, boost exports of high value agricultural products and increase farmers' income. If a small country like Netherlands could be one of the top three exporters of farming produce in the world, India has the potential to become the granary to the world.

## Acceleration in Growth of Micro, Small and Medium Enterprises

Large companies alone will no longer be able to contribute to the economic development of the country. The key to inclusive development will have to be the growth of MSMEs. This will be vital for creating jobs and accelerating the economy. India needs both good managers and a large pool of successful entrepreneurs.

## Strengthening of Infrastructure

Infrastructure is the catalyst for a booming economy. This is also vital if we have to create space for migration of rural workers to urban areas. While the state will have to play a leading role in the development of infrastructure, we should not shy away from facilitating private investments or public-private partnerships despite the challenges and experiences of the recent past.

## Deft Management of Environment

India will have to decouple its growth from the environmental impact. We cannot live with a tag that 22 out of the 30 most polluted cities in the world are in India. We also have to put a cohesive strategy to resolve our exacerbating water problem, which, if left untouched, could significantly stem our growth and create serious societal problems.

## The HUL Story

"Together with embedding purpose into our brands, as an organization, we are working on enhancing livelihoods of communities as well as improving the health of our planet."

Project Shakti provides livelihood opportunities to women micro-entrepreneurs in rural India. Shakti entrepreneurs are trained by us on sales and distribution. Today, Project Shakti has nearly one lakh ten thousand women micro-entrepreneurs across 18 states. In the process, we get unparalleled distribution reach for our brands.

Our work with smallholder farmers as a part of our sustainable sourcing agenda, focuses on training them on good agricultural practices such as drip irrigation, nutrient management and pest and disease management. Thousands of smallholder gherkin farmers in southern India and farmers growing tomatoes for HUL have benefitted from these training initiatives.

Through the Hindustan Unilever Foundation, we are creating solutions to water scarcity and enhancing water-dependent livelihoods. Till the end of 2018, working in over 4,300 villages we have created a water conservation potential of over 700 billion litres.

"We are creating greener factories and have already reduced our $CO_2$ emissions, water consumption and waste generation by over 50 per cent in the last decade."

The share of renewable energy in our manufacturing stands at 43 per cent in 2018 and is set to grow further.

We are systematically reducing our plastic footprint through the 4R framework: reduce, reuse, recycle and recover. We are committed to ensuring that 100 per cent of our plastic packaging is reusable, recyclable or compostable by 2025. Also, 25 per cent of plastics we use will be sourced from post-consumer recycled plastic content.

### Set the Balance Right

In the longer-term horizon, the country needs to focus on a few key areas. One is rural. We all agree that the equation of over 60 per cent of the population living primarily on 16 per cent of the GDP is not sustainable… The bottom 50 per cent of the population has a very small share of consumption and India cannot progress unless we are able to lift these people and make a substantial difference to their quality of living.

– Sanjiv Mehta in *Economic Times*

We are creating greener factories and have already reduced our $CO_2$ emissions, water consumption and waste generation by over 50 per cent in the last decade




# Farm Strategies for Dignified, Secure, Minimum Living Income

***A Farmers' Forum Report***

There has a felt need to take up the proposals talked about during the run-up to the Indian elections vis-à-vis addressing the agrarian crisis and to explore them in depth. These, particularly those related to income security or enhanced incomes for farmers, featured on the political platforms of all major parties. Direct Benefit Transfer schemes related to cultivation support or income augmentation have been implemented or announced by several states like Telangana, Odisha, Andhra Pradesh and Jharkhand. The central government is now extending PM-KISAN to all landholding farmers. Doubling Farmers' Incomes is a commitment by the BJP in its manifesto as well.

These developments point to an emerging consensus that government policy should focus on ensuring adequate farm incomes and place at the centre of policy discourse the assertion of farmer organizations and their advocates that "a Dignified, Secure, Minimum Living Income is a Right of Every Hardworking Farming Household."

A collaborative workshop on securing living incomes for farm households was, therefore, held in Goa between July 31 and August 3, 2019 to explore the paradigms of the developments. The organizers, Bharat Krishak Samaj, with Alliance for Sustainable & Holistic Agriculture (ASHA) and facilitation by Socratus and Fields of View, considered a novel and innovative methodology

'Socrutus', derives inspiration from the Greek philosopher, Socrates (who sought to be the "midwife of wisdom", eliciting knowledge from others because there is a need for a "midwife of collective wisdom" to tackle today's complex problems). The objective was to come up with a well-thought out proposal to create a coherent and practical path for achieving income security.

This is clearly a complex problem and may even be called 'wicked'. There are diverse viewpoints on how to address agrarian distress and achieve secure farm incomes. Some believe that increasing productivity is the key element while others believe that addressing the price gap and marketing challenges are the most important pieces of the puzzle. Yet others believe that providing direct income support is the solution while others argue that a basket of measures is required that also addresses land rights and tenancy.

The diverse viewpoints are a matter of different priorities but also point to altogether different world views. The expertise and ability to unravel the problem, examine possible solutions and their pitfalls and devise a viable solution lies with many different

There is an emerging consensus that government policy should focus on ensuring that "a dignified, secure, minimum living income is a right of every hardworking farming household"



## Facilitation, Rapporteur and Other Support From:

"SOCRATUS": Socratus is a new initiative founded in January 2019 that aspires to bring a new Socratic method, for solving complex problems of our times. Pitched at the collective rather than an individual, it is a midwife of collective wisdom; a Socratus, rather than Socrates.

- Arvind Balasubramanian
- Ananthapadmanabhan Guruswamy
- Rajesh Kasturirangan
- Arundhati Muthu

Fields of View, undertakes research at the intersection of technology, social sciences and art to design innovative tools for policymaking that is relevant, responsive and fast. For the fifth consecutive year, Fields of View has been featured in the 'Global Go To Think Tank Index Report' by the University of Pennsylvania.

- Vaibhav Dutt
- Yashwin Umesh Iddya
- Jahnavi RR Koganti
- Sruthi Krishnan
- Puja R Laginya
- Bharath Palavalli
- Prashanth Raghuram
- Suruchi Soren
- Dr Siva Muthuprakash (for data projections)
- Divya Veluguri (rapporteur)

## The workshop sought a shared understanding of the goal of income security and the different approaches to arrive at pathways to achieving it

people and institutions, whose diverse insights and profound disagreements can lead to constructive engagement and to the co-creation of a solution.

The Socratus process has been named a Wicked Sprint and the intense four-day collaborative process is specially designed to elicit collective wisdom. The method recognized the importance of approaching and solving complex problems by tapping into the collective wisdom and knowledge germane to the issue at hand that is resident in a diverse set of stakeholders and experts. It is designed to break out of traditional siloed, piecemeal or knee jerk approaches to solving of a wicked problem that are bound to fail or fall short.

The exercise involved the use of three toolkits: technology and design; mental models and systems thinking; reflective imagination and contemplation. The outcomes that it sought were: to develop a deeply shared understanding of the overall goal of income security, conceptual or definitional issues and the different approaches to arrive at pathway(s) to achieving them.

## Dialogue on Productivity with Sustainability

**"Optimal" versus "Maximum" Productivity; the Overarching Statement:**

There are multiple pathways to higher profitability for farmers: for productivity and for higher price realization:

- Farmers are primarily concerned with productivity and better prices but not always about sustainability. They will continue to attempt yield maximization, as they are accustomed to
- It is the state that is responsible for creating an ecosystem for sustainability. This cannot be left to the private sector. The onus must be on public sector through research and extension.

**Parameters to govern 'productivity with sustainability':**

- Technology and policies
- Access to and ownership of technologies
- Interlocking aspects
- Resource availability.

**Technologies, Practices and Policies**

- Technologies and practices do exist to promote sustainability
- Policies need to reallocate financial resources to incentivize sustainable use of natural resources, pulling them away from being "perverse incentives"
- There must be an incremental rationalization of existing public spending because it is possible to deploy existing sustainable technologies incrementally for optimal use
- More resources are needed for the deployment of "para-extension" personnel (like scouts and extension sub-inspectors or multi-purpose extension officers) as and when needed for extension, to emphasize on sustainability
- Niche markets need to be created for sustainably produced products with separate labels created and supported for the purpose.

**Ownership of Technology**

- The primacy of public interest goals like sustainability exist explicitly in the public sector
- The apparent contradiction between sustainability and productivity can be resolved through public efforts.

The first step towards bridging the current gap between productivity and sustainability has to begin from a deep political will.

**Discussion at the Plenary**

- Emphasis on productivity alone causes a lack of sustainability
- If we produce more, incomes fall at the market front
- What is the timeline for achieving sustainability in agriculture?
- It is important to note that the precautionary principle must also be applied for certain decisions
- Different categories of farmers have different terms of trade. It is important to look at productivity and sustainability specifically in the context of smallholders
- Input use efficiency, like per-unit use of water, needs to be improved
- It is not just about policy orientation but also that farmers, in their own wisdom and desperation, tend to focus on maximizing yield. Therefore, focusing on profitability becomes important.

## Dialogue on Resources – Are they Available for Our Proposals?

**Target**

To allocate an additional ₹2.5 lakh crores in the annual central budget for agriculture and related items, including irrigation and water management, rural and marketing infrastructure and MGNREGS, apart from other "agriculture and allied sectors" allocations.

**Sources**

- A wealth tax of one per cent designed such that it applies to the top one per cent of wealth holders, who own 51 per cent of the wealth in the country, (₹300 lakh crores)
- Expected revenue: ₹3 lakh crores
- An additional 0.5 per cent cess on income tax, equivalent to ₹18,000 crores
- Reallocation from other current priorities in the budget.


It was believed that a full consensus would be difficult to achieve but some coherence in positions to make future collaboration more likely was expected. By design, the workshop sought to bring together people representing the different viewpoints and closed in on some themes for an ongoing dialogue. Some of them are explained in some detail in this report. They include:

- Vision on Farmer Incomes
- Definition and Diversity of farmers
- Resources available
- Specific topics and interventions
- Concrete plans for collaborations

The last day of the workshop was focused on not just reviewing the processes of the workshop but also on a few concrete plans for future collaborations, and a 100-day plan for each such proposal.

## Definition

It was agreed that wage-earning agricultural workers were best kept out of the definition of a "farmer" for more focused interventions that are needed for them. Similarly for fishers. However, livestock gatherers as well as households combining forest gathering with some cultivation were included, along with others like bee-keepers and such others. The definition of the group of participants in that sense mostly veered towards the 70th Round NSSO survey's definition of an agricultural household. Women from households who work on family-owned land were sought to be visibilized as farmers through a proposal for joint titling of land, while other women farmers would get covered in the inclusive definition given above as livestock rearers, cultivators and such others.

Dr Ramesh Chand, Member, NITI Aayog made a presentation on the government of India's road map and strategy for improving farmers' incomes (See list of speakers). Broadly, the outcomes can be examined under the following heads:

## Income Goals

It was clear that income aspirations held for farmers are not just around 'doubling of farmers' incomes' but a targeted income level that provides 'dignified living', which can be arrived at using a formula of different expenditure components that are needed for a decent living. The average figure, as an average across the targets that different participants quoted, is about ₹20,000 a month for household at current prices. It was also felt that it is desirable to have a clear sub-target for income

## Three Possible Modes to Address the Issue:

**1. Vertical Integration**

- Value chain intervention that would require increasing the value realized for the existing skills. One example is including value for ecological services
- Building new skills to generate more value from the primary produce

**2. Horizontal Integration**

Identifying new markets that can be in different locations or sectors and strengthening existing markets for the goods that are outputs of such value addition made by the farmers

**3. Network Micro Enterprises**

Policies to facilitate and not to become barriers to FPOs, producer groups and micro-factories.

## DIALOGUE

# PARTICIPANTS

**DR RAMESH CHAND**
Member, NITI Aayog – Joined over a Skype Video Call.

**1. SANDIPAN BAKSI**
Sandipan Baksi is the Director of Foundation for Agrarian Studies, Bangalore. He holds an MPhil in Development Studies and is working on a thesis on the history of science and agriculture in India.

**2. SAYANTAN BERA**
Journalist tracking rural India, with Mint. Formerly, an environment writer and researcher in economics. Earlier with Business Standard and Down To Earth. An M.Phil in Economics from Jawaharlal Nehru University.

**3. DR ASHOK DALWAI**
CEO National Rainfed Area Authority, Ministry of Agriculture & Farmers Welfare, and Chairperson of Government of India's Inter-Ministerial Committee on Doubling of Farmers' Income. An alumnus of University of Agricultural Sciences, Dharwad.

**4. DR SAURABH GARG**
Principal Secretary, Agriculture, Government of Odisha. Alumnus of IIT-Delhi and IIM-Ahmedabad. Earlier with the Ministry of Finance, Government of India. Was also an Advisor to the World Bank Group.

**5. DR RAJEEV GOWDA**
Member, Rajya Sabha. Spokesperson of Indian National Congress. Was earlier a Director of the Central Board, Reserve Bank of India. Teaches at Indian Institute of Management, Bangalore.

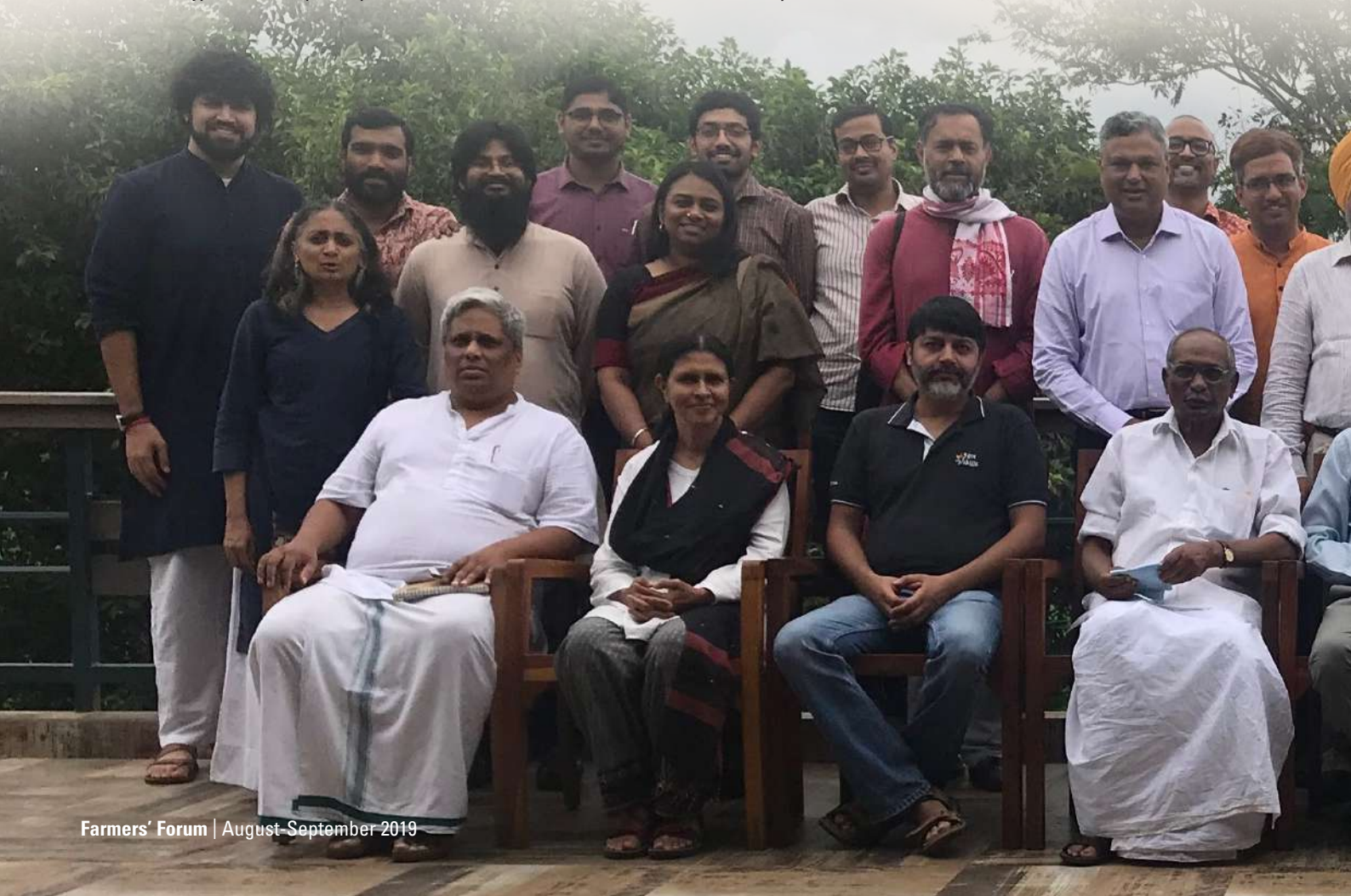
**6. DR SIRAJ HUSSAIN**
Senior Visiting Fellow, Indian Council for Research on Economic Relations (ICRIER); Former Secretary of Ministry of Agriculture & Farmers' Welfare and Former Secretary, Ministry of Food Processing, Government of India.

**7. AJAY VIR JAKHAR**
Chairperson, Punjab State Farmers' Commission. Chairperson, Bharat Krishak Samaj. Citrus Farmer. Columnist.

**8. DR TN PRAKASH KAMMARADI**
Chairperson of Karnataka State Agriculture Price Commission. Former Professor of Agricultural Economics in the University of Agricultural Sciences Bangalore.

**9. RAJESH KRISHNAN**
CEO of Thirunelly Agri Producer Co (FPO). Organic rainfed farmer and conserver of traditional paddy varieties. Earlier with Greenpeace India as Team Leader for Sustainable Agriculture Campaign.

**10. DR ARUN KUMAR**
Economist. Malcolm S. Adiseshiah Chair Professor at Institute of Social Sciences. Formerly, Sukhamoy Chakravarty Chair Professor, Centre for Economic Studies



and Planning (CESP), Jawaharlal Nehru University.

**11. KAVITHA KURUGANTI**
Co-Convenor of Alliance for Sustainable & Holistic Agriculture (ASHA). Founder and Member, National Facilitation Team of Mahila Kisan Adhikaar Manch (MAKAAM). Served as Member, Government of India's High Level Committee on Status of Women in India.

**12. PRASHANT MEHRA**
Social Intrapreneur working on rural supply chains and smallholder agriculture. Head of MindTree Foundation. Alumnus of IIT Kharagpur. Creator of open access digital platforms for enhancing rural livelihoods like "I Got Crops".

**13. APAS SINGH MODAK**
Researcher and Programme Manager, Foundation for Agrarian Studies. As part of Project on Agrarian Relations in India (PARI), works on village studies on farmer incomes, access to irrigation and related topics.

**14. DR KULDEEP RATNOO**
Director, India Policy Foundation. Clinical Psychologist. Taught at Mayo College, Ajmer.

**15. MALLA REDDY**
Vice President, All India Kisan Sabha (Ashoka Road). Prominent farmer leader of Telangana.

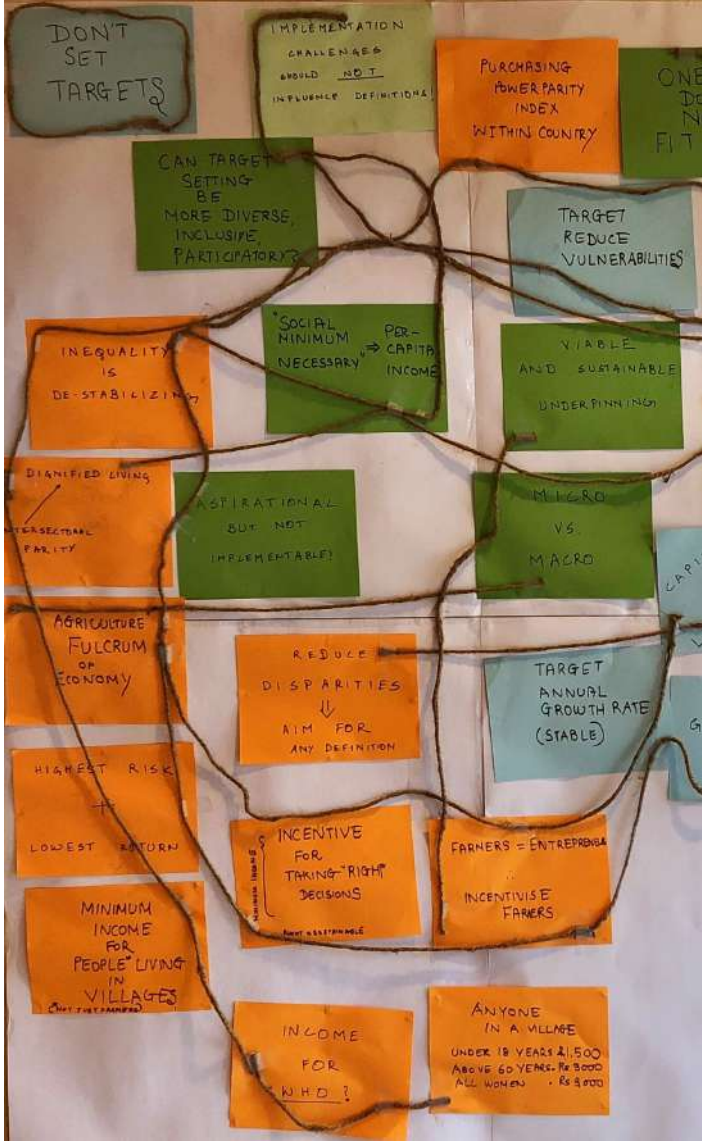
**16. SHWETA SAINI**
Senior Consultant, Indian Council for Research on Economic Relations (ICRIER). Columnist in national newspapers.

**17. B S SIDHU**
Director, Department of Agriculture, Punjab. Secretary, Punjab State Farmers' Commission. Trained as an Agriculture Engineer. Contributed to policy formulation, planning and implementation through key positions. Led efforts that got several awards for Government of Punjab on the agriculture front.

**18. DR AR VASAVI**
Social Anthropologist and Agrarian Studies expert. Trustee of Punarchith Collective. Formerly with National Institute of Advanced Studies (NIAS). Author of "Harbingers of Rain", "Shadow Space: Suicides and the Predicament of Rural India".

**19. KIRAN VISSA**
Social activist. Alumnus of IIT-Madras. Founder of Association for India's Development, USA. Co-Convenor of Alliance for Sustainable & Holistic Agriculture (ASHA) and Convenor, Rythu Swarajya Vedika (Telangana & Andhra Pradesh).

**20. YOGENDRA YADAV**
Activist and academic. Psephologist. Senior Fellow at the Centre for the Study of Developing Societies. Founding Member of Swaraj Abhiyan and Jai Kisan Andolan.






## Income goals cannot be just for farmers. The whole economy should be taken into account and it is desirable to have a "Social Minimum Necessary Income"

goals from farming (cultivation and livestock). Participants felt it was possible to have a good match between the value that can be derived from an average landholding size in India (and how much of that value can go to the farmer) and the level of income needed to meet basic needs.

Income goals cannot be just for farmers. The whole economy should be taken into account and it is desirable to have a "Social Minimum Necessary Income", which will be relative, determined by citizens themselves; Living Incomes (for farmers or anyone else) should be more than minimum wage levels. However, to be pragmatic to begin with, they should be at least 25 days x 2 adults x ₹350 a day, per person, which is the legally mandated minimum wage in India now. This is around ₹17,500 a month per household. A minimum income plus an incentive that would add up to ₹20,000 per month per household is desirable as a goal. Within this, at least ₹10,000 per month should be from cultivation.

Thus the target should be ₹10,000 per month for income from farming (not for the household from all sources), keeping in mind that 40-50 per cent of the time of two adults of a family is spent on farming, along with capital deployed, maintenance costs and such others. In another valuation of providing 20-30 per cent of the retail price of the consumer that the food industry collects, with farmers moving up the value chain, the income targets should be fixed at ₹20,000 a month for every household.

### Definitional Clarity About a Farmer

Participants of the workshop dwelled on definitional clarity around who is a farmer or what constitutes a farm household. It was agreed that the definition should serve the purpose of identifying and extending benefits and support to those who need to be supported for obtaining incomes for dignified living in agriculture. The




multiple sources of income and the proportions from agriculture would be a key to such identification. These are mostly in combination of land+labour outcomes.

This session concluded that the key question might not be so much about "what constitutes a farmer household" but more about what are the various categories of farm households without assuming anything about a "typical or average farmer" and what is the differentiated approach that needs to be taken for each category. It is also clear that farmers may move across categories and that is where a dynamic identification system is needed.

After discussing essential features of a farm household and official definitions of an "agricultural households", the participants concluded that definition should definitely not be linked only to land ownership. Within any definition, for linking farmers to land there should be a consideration for commons or CPRs and not just private land. Within private land, it is not just land title ownership but operational holdings or possession of land that might be owned by others too.

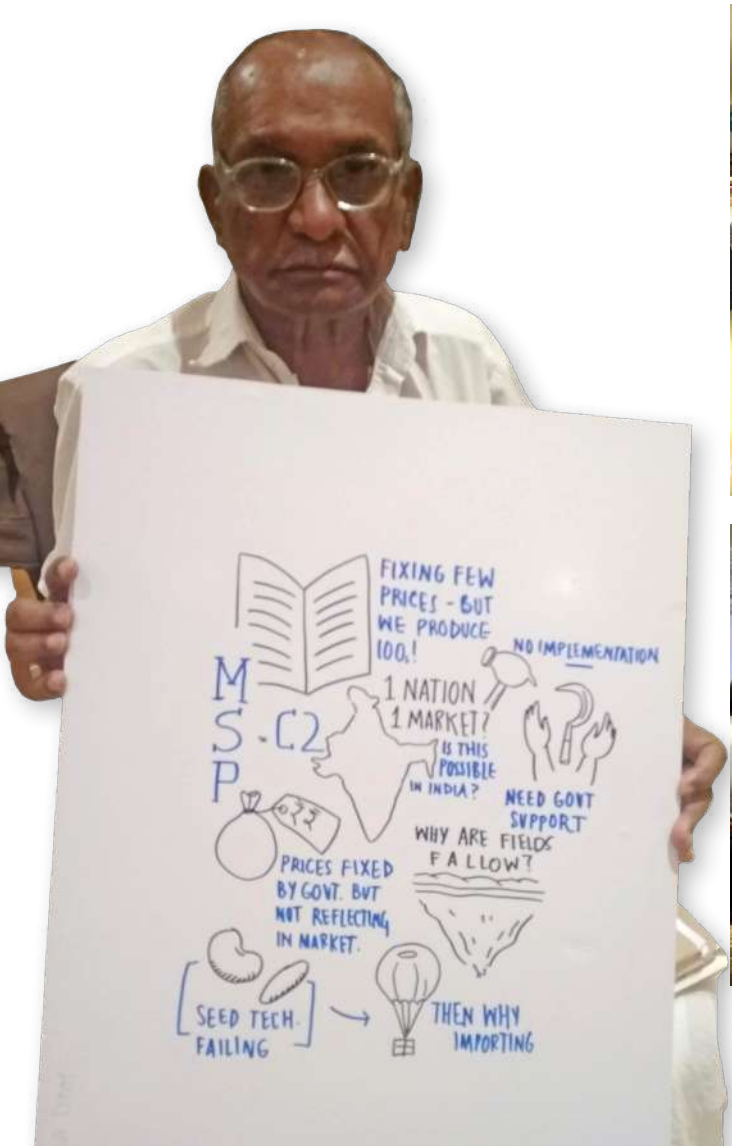
It was also felt that categorization of farmers is for a purpose related to interventions that would ensure dignified living and not just for theoretical purposes. It was agreed that having a dynamic and inclusive definition, keeping in mind the different sources of income that a household has, is useful, even as certain kinds of households can be safely kept out (government employment, income-tax payee and such others).

Labour investment as well as entrepreneurship should be key features of any definition. Labour is both about manual labour as well as management related labour put in. A certain right over the produce is also a key feature of who gets to be called or considered as a farmer.

## Identification of Farmer Households

The need for identifying and registering all farmer households in the country was acknowledged. Here, the inclusion of tenant farmers in Odisha in the KALIA database and the Andhra Pradesh Licensed Cultivators' Act and LEC Identity cards were noted as possibilities. E-crop booking of Andhra Pradesh to record cultivators was also brought up. The FRUITS portal of Karnataka, which is a unified database for all farmers in the state, across five different departments was discussed as a possible way forward.

# DIALOGUE


FIXING FEW PRICES - BUT WE PRODUCE 100!
M S P - C2
1 NATION 1 MARKET?
IS THIS POSSIBLE IN INDIA?
NO IMPLEMENTATION
NEED GOVT SUPPORT
WHY ARE FIELDS FALLOW?
PRICES FIXED BY GOVT. BUT NOT REFLECTING IN MARKET.
SEED TECH. FAILING
THEN WHY IMPORTING

There is need to expand the definition of agriculture GDP to include such goods and services that enhance value addition but are dependent on primary produce

## Dialogue on Price Support and Income Support

1. Price support and income support are both required without compromising on any public welfare schemes
2. In-kind subsidies should be moved to direct cash support to allow farmers to directly purchase inputs based on their needs
3. An unconditional, per hectare payment can be designed, possibly with a cap of four hectares per farmer, for ensuring equity. The existing input subsidy regime is distorting markets and is environmentally destructive. Shifting to DBT will encourage an agro-ecologically compatible agricultural system.
4. On the output side, a combination of physical procurement and deficit payment must be used for crops with declared MSP. This will be undertaken based on supply and demand in the market and on agri-logistics for that particular crop.
5. At least 25-40 per cent of present production should be brought under the MSP procurement regime
6. For perishable produce, the focus should be two-fold:
   a. Support under a market intervention scheme;
   b. Creation of market infrastructure, value chain and processing
7. Three types of payments are proposed:
   a. Obligatory payments – standard payment for all
   b. Flexible payment – for incentivization & exigencies
   c. Transitional payment – to smoothen out the process of shifting in-kind subsidies to cash transfers.

### Should agriculture be seen as the hub of employment generation or should people be moved out of agriculture?

Premise

- 50 per cent of the population is dependent on 17 per cent of the GDP, which is not viable
- Increasing the urban population from 30 per cent to 65 per cent is also not viable

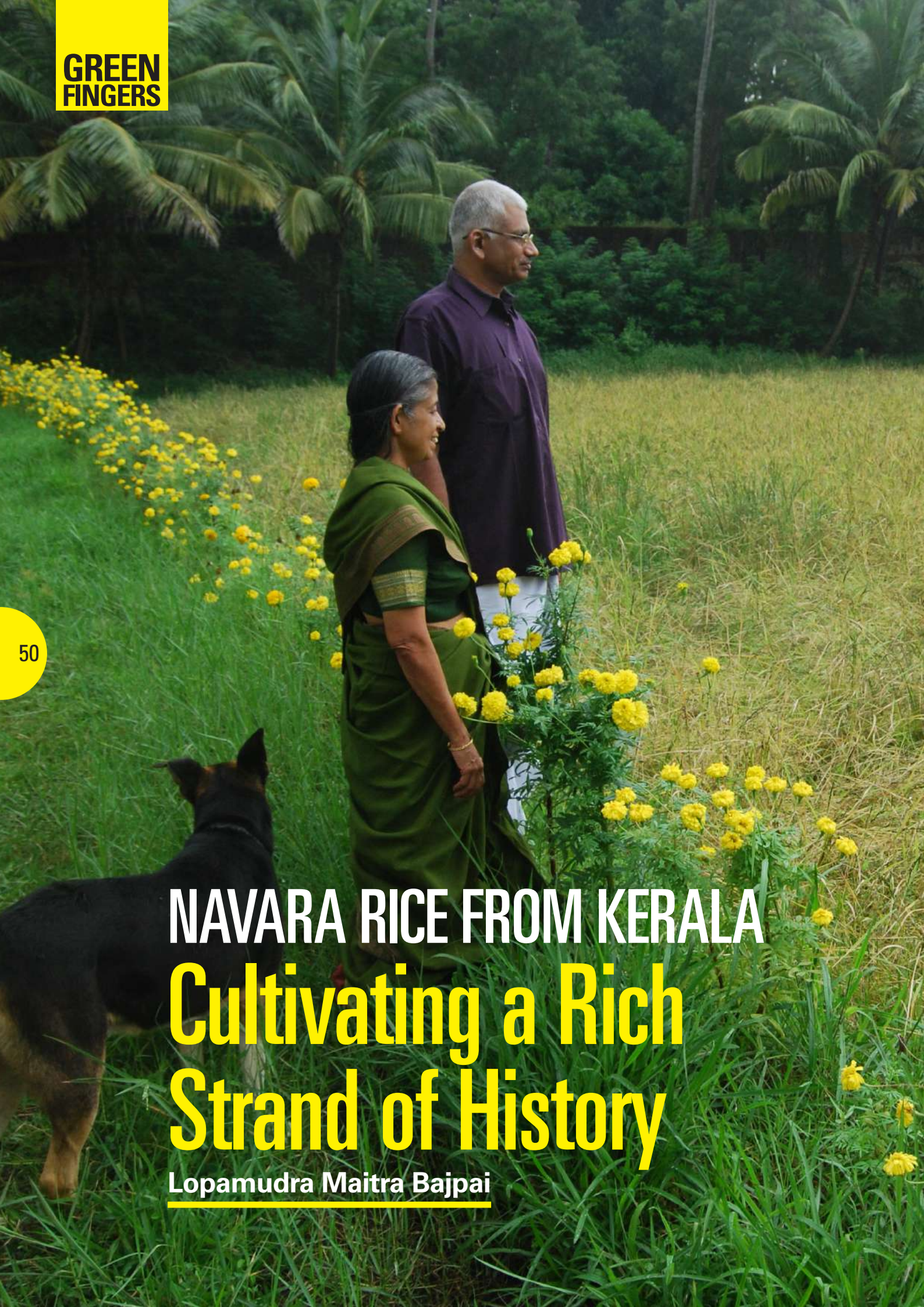
Hence, from Agri – "culture" to Agri – "enterprise" approach.

### Is it possible to have agriculture as an employment generator?

- Skilling and re-skilling are needed to move people up the value chain from primary production to agri-dependent goods and services
- Consider expanding the definition of agriculture GDP to include such goods and services that are enhance the value addition but are dependent on primary produce. For example, agro-processing, medicines, textiles and such others.

### Prosumer Model

- Build local ecosystem to improve local inputs, local services that would enable farmers to provide financially-viable services
- Agri-enterprises should be enterprises that are small and that would consider people as appreciable assets rather than people as cost and avoid big capital-intensive enterprises with mainly depreciating assets.



## NAVARA RICE FROM KERALA

# Cultivating a Rich Strand of History

Lopamudra Maitra Bajpai

Unny, with wife Rema Devi and dog Jimmy in the Navara rice field

Photo: P. Narayanan Unny

In a verdant farmland, on the banks of river Shokanashini (meaning destroyer of sorrows) in Chittur, Palakkad district, Kerala, a proud signboard greets one: "World's Largest Navara Farm." On one corner of the signboard is the symbol of the farm and the acronym, UNF or Unny's Navara Farm.

**LOPAMUDRA MAITRA BAJPAI**
Visual Anthropologist and Author engaged in research in socio-cultural anthropology, including folk culture and oral traditions

For his outstanding efforts, the farmer, P. Narayanan Unny, was conferred the "Plant Genome Savior Community Recognition Award" by Protection of Plant Varieties and Farmer's Right Authority (PPV & FRA), Union Ministry of Agriculture.This is the Navara Eco Farm (NEF) famous for cultiving Navara rice. In Palghat, Navara rice is deep red in colour as it has been for upwards of 2,000 years.

In this more than a century-old, family-run farmland, Unny, "a marketing executive-turned farmer" is the third-generation cultivator/farmer currently managing it and, through his diligent efforts, placing Navara rice on a global platform, along with a Geographical Identification (GI) tag.

This GI tag became a part of history as the very first product to receive a GI tag in India through a farmer-led initiative. For this significant contribution to environment and natural heritage, Unny has been severally awarded. The most recent award was the Anirudh Bhargava-INTACH Environmental Award that came with a cash prize of ₹50,000, a memento and a citation.

Though a deep red in colour, Navara is different from the regular red rice and is a highly recommended medicinal produce especially to treat patients with rheumatism. "It is also in high demand during the Malayalam month of Karkidakam for Ayurvedic rejuvenation treatments", says Unny. The rice finds mention in ancient Ayurvedic texts and Unny's conscientious efforts facilitated its global recognition.

The INTACH award specified Unny's contribution as "a pioneering rice farmer whose work with the medicinal rice variety 'Navara' has not only re-generated a priceless heirloom grain but opened up possibilities of restoring financial sustainability to rice farming in the granary of Kerala". This was possble thanks to intensive and hard work spanning across decades in a story that


Navara Foundation stall at the National Biodiversity Expo 2019

Photo: P. Narayanan Unny

## The fraternal combination of a rice specialist elder brother and the younger brother, a practicing farmer, helped the farm

### Red and Nutritious

"Navara, a medicinal rice, is one of the native genetic resources of Kerala, famed for its use in Ayurveda. As it seems to have originated in a limited area and has not spread appreciably (as its cultivation and use is confined to Kerala), it can be considered as endemic crop (Harlan, 1975)"* Navara is a Sastika rice variety and used as a nutritional rice and health food. It has been recognized for its medicinal values from days of yore. As translated from Sanskrit, Sastika means the paddy which matures in 60 days, is best among the rice, and is unctuous, easily digestible, sweet, mitigates all the three doshas, stays long inside the body (alimentary tract) and cold in potency; it is of two kinds – gaura (white) and asita – gaura (blackish – white)

– *1996 thesis on "Effect of different inputs on productivity and quality relations in Navara"
Meera V. Menon, College of Horticulture, Vellanikkara, Thrissur, Kerala.

began during the time of Unny's grandfather, who owned and looked after the farm.

Unny recollects, "I have seen my father, M. Ramachandra Menon and elders, particularly his elder brother, M. Kelukutty Menon, farming and being very committed to it. My grandfather passed away when my father was around 17 or so and left the farmland for the family. My grandmother instructed my father and uncle on how to look after their inheritance. Ever since, my father has looked after the farm continuously for the 67 years. In the early years, there was limited production of red rice and it was merely used for personal consumption."

Over time, the family gathered and, literally, cultivated knowledge around agriculture and farming systematically. Both Unny's father and his uncle graduated from the Tamil Nadu University in agriculture. "M. Kelukutty Menon one of the first rice specialists at the Rice Research Station in Patambi, in Kerala, while my father continued with the production of red rice". This fraternal combination of a rice specialist (agriculture scientist) elder brother and the younger brother who was a keen practicing farmer, helped in the systematic development of the farm.

"I was born in 1957 and, throughout my childhood and right up to 1994, I have seen my father gradually develop the farm in an organized manner. This helped me in many ways as well, when I took over the farm later", recalls Unny. In any event, the region has been renowned as

Black Navara Paddy

Photos: P. Narayanan Unny

P. Narayanan Unny receiving the Plant Genome Savior Recognition Award

an important area for rice cultivation. Unny explains: "This is the rice belt of Palakkad. The farm is in Karukamani in Peruvembu Panchayat of the Palakkad district. The area has a history of rice cultivation of more than 2,000 years and the production is very high. Next is the production from the Chitoor region".

After 1994, when Unny took up the responsibilities of the farm, he added to its recognition. Across the 12-acre farmland, Unny helped to revive the exclusive variety of Navara rice, which had a long-standing tradition here and gradually made it available across the nation and various parts of the world. This was never an easy task. Today, even Amazon sells it for around ₹350 a kg.

"When I took up the farm, I was often advised that rice farming is a losing proposition. Initially, I thought of two specialities of rice, Navara and Red rice. I knew there was a demand for Navara but nobody was cultivating it as the crop presented a lot of challenges. Also, when I started, there were no pure Navara seeds available. It took me more than three years of rigorous cultivation over 4-8 acres of land to finally have pure Navara rice seeds."

Once the process began, there was no looking back. Every step has been a learning experience about hardwork, environmental friendliness by avoiding chemicals and perseverance as the farm grew. Unny says: "We wanted it to have an organic certification and did not want to use any chemicals in our farmland. It was a difficult task but we accomplished it. Today, we have 72 agricultural products, medicinal plants, spices, vegetables, creepers, flowers, leafy vegetables growing in our farmland, apart from the Navara rice."

The Navara rice has also undergone several scientific studies and observations by various institutes and organizations, including the Regional Research Laboratory (National Institute for Interdisciplinary Science and Technology (NIIST), the Kerala Agricultural University and Rajiv Gandhi Centre for Biotechnology. Besides, it has undergone several chemical analysis. The Department of Botany, Government Victoria College, Palakkad and the Kerala State Council for Science Technology and Environment have jointly conducted a study on "Medicinal rices land races, Kerala" on a 15 cent plot at NEF. There are also a host of scientists, students and various authorities of different government departments and agencies, regularly visiting the farm to study the ongoing work and efforts.

The farm received an organic certification by 2000-2001 and, over the next few years, it also received various certifications from the Indian government as well as the European Union. By 2006, the entire farm got organic certification. Amidst all this, in 2004, Naryanan Unny started the process of registering of the Navara rice for a GI tag and, in 2007 November, Navara rice received a GI tag.

It took more than three years of painstaking pursuit to ensure this GI tag for Navara but it


Photo: P. Narayanan Unny



was immensely helpful and was a milestone in Indian farming history as the very first farmer-led initiative to receive a GI tag. Unny did not merely stop at this but worked hard to spread the word. This resulted in 171 different types of workshops, seminars, presentations and discussions between 2006 and 2019, across various events in India and abroad. At each of these events, Unny highlights the health benefits of Navara rice. The most recent one was at the 2019 National Biodiversity Expo organized by the Kerala State Biodiversity Board.

An inspiration for many, Narayanan Unny's efforts have motivated several farmer collective initiatives in the region and many others to focus on increasing production in their respective farmlands. "This Navara rice has helped to boost the morale for all farmers in Kerala, to deal with existing constraints and hindrances", says Unny.

The perseverance also helped to take Navara on a global platform that, again, was not an easy task, as Unny recollects: "Across 2015-16, we could market the Navara produce mainly within India. By 2008, we got enquiries for export and we sought a licence for export. However, it was difficult given the ban on export on non-basmati rice.

The condition, however, changed within a couple of years and, by 2010, it was decided that 10,000 tons of non-basmati organic rice would be allowed for export. These enhanced efforts have inspired many other rice agriculturists of the region to do more with their produce.

"The price of rice had gone down in recent years and our efforts have inspired small groups of farmers to convert paddy into rice and sell it at a better price. Farmers are getting motivated and farming clusters are being formed, especially to address common and pressing issues", Unny explains.

Unny's efforts have found expression in other channels of communication as well, especially through the Navara Foundation. He is preparing a book on Navara rice and, most significantly, working to build an interactive museum that will showcase rice categories not only of Kerala and other parts of India but also international varieties. There will be varieties of rice on display along with audio-visual representations about their culture, practices and history. The museum, will hopefully provide a holistic experience, says Unny.

This will be done through demonstrating the various implements used to cultivate rice, along with demonstrations of various activities that go on in a farm, starting from hand-pumping, sowing, trashing and such others. Being an interactive space, the museum will offer and encourage people participation. Those keen to get hands-on experience can even participate in the farming activity at the year-end.

Says Unny, "The entire idea is to make it a rich learning experience".

# More Crop Per Drop®

## More crop per unit land- More crop per unit input.

**JAIN CONSTRUCTS POLY HOUSE/SHADE HOUSE/NET HOUSE and POLY TUNNELS**

JAIN IRRIGATION BRINGS PROSPERITY TO FARMERS;
THRU WORLD CLASS QUALITY MICRO IRRIGATION AND FERTIGATION SYSTEMS,
BOTH ARE ESSENTIAL FOR HIGHTECH FARMING.

**JAIN EXPERTS ASSIST FARMERS IN HIGHTECH PRODUCTION METHODS**

Empower the farmers with SUSTAINABLE FARMING AND HIGHER PROFITS.


**Jain Irrigation Systems Ltd....**

- The largest manufacturer and supplier of drip and sprinkler systems in the world.
- Offers complete crop production packages for open field and protected cultivation.
- Only company that provides end-to-end solution for hi-tech farming.
- Offers systems for climate control and input supply in Poly houses.
- Provides full Automation for all systems.
- Undertakes training of trainers and farmers.
- Farmers learning thru experiencing at Jain R&D&D farms.
- One stop shop for all agricultural inputs.
- Company with rich experience in India and abroad with internationally qualified experts.
- Only Company with inhouse training center and R&D&D farms.


Jain Irrigation Systems Ltd.
Small Ideas. Big Revolutions.®

Jain Plastic Park, P. O. Box: 72, N. H. 06, Jalgaon - 425001. (Maharashtra).
**Tel:** +91-257-2258011; **Fax:** +91-257-2258111;
**E-mail:** jisl@jains.com; **Web.:** www.jains.com

Offices (Tel): **Ahmedabad** 09426511403, **Anantur** 08554-274226, **Bangalore** 080-25361257, **Bijapur** 09448286500, **Bhavnagar** 02846-294222, **Chandigarh** 09417202115, **Chennai** 044-22200500, **Coimbatore** 0422-2457318, **Deharadun** 0135-2669865, **Guwahati** 9435199998, **Hyderabad** 040-27611706, **Indore** 0731-4265112, **Jabalpur** 09200025444, **Jaipur** 0141-2203515, **Kolkata** 033-24198648, **Lucknow** 0522-4021067, **Mumbai** 022-22109090, 22610011, **New Delhi** 011-26691569, **Patna** 0612-6560266, **Pune** 020-26057777, **Ranchi** 0651-2532240, **Raipur** 0771-2582091, **Sundernagar** 09418169333, **Shimla** 09418171333, **Sanchore** 02979-285730, **Vadodara** 0265-2356727,
**Cochin Office:** CC29/1288 E, 1st floor, vyttila, Ernakulam, Cochin – 682019, Tel: 0484-2307642, Mob: 9446363742, 09446504333.