

> Perspectives on India's Farming Crisis

> From Farm Widow to Face of Change

FARMERS' FORUM

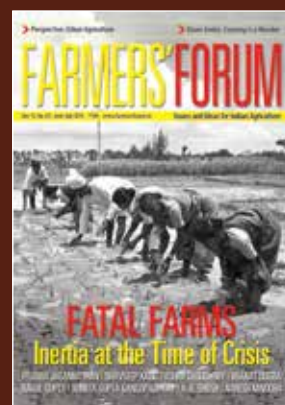
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Issues and Ideas for Indian Agriculture

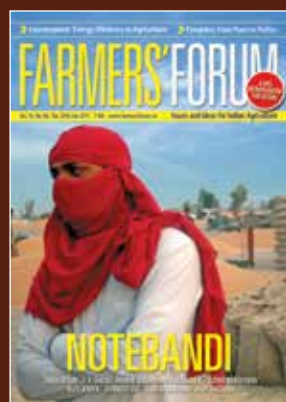
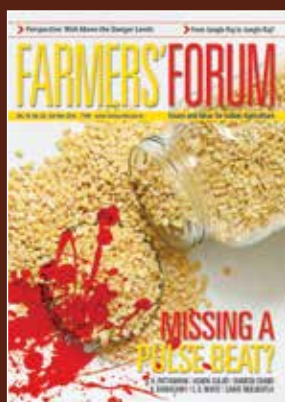
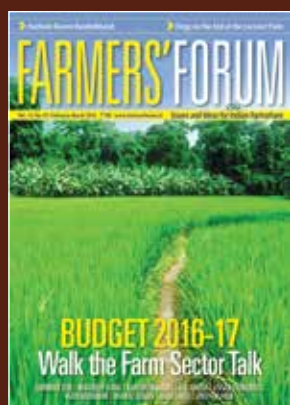


FARMING AS THE CENTREPIECE OF THE INDIA STORY

POOJA MEHRA | R. RAMAKUMAR | HARISH DAMODARAN | T.K. ARUN | ARVIND MAYARAM
BHARAT RAMASWAMI | RATHIN ROY | AUNINDYO CHAKRAVARTY | SHAMBHU GHATAK



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A SYSTEMS
APPROACH
IS RADICALLY
DIFFERENT FROM
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EXPERIENCE
HAS REPEATEDLY
INFORMED ONE
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EXPECT THE
INDIAN COUNCIL
OF AGRICULTURE
RESEARCH TO
DEVELOP ONE

corporate taxes to stimulating consumer demand by raising spending under the Mahatma Gandhi National Rural Employment Guarantee Act or a one-time higher PM-Kisan dole out. It has, instead, cut allocation for PM-Kisan by 27.5 per cent for this fiscal.

Given the constraints of limited resources, it is important to augment government revenues. Thus, a beginning could have been made by scrapping schemes such as the Pradhan Mantri Fasal Bima Yojna and save over ₹20,000 crores annually. The government would be better advised to return to the drawing board with farmers to figure out how the *bima yojana* would work better.

Alcohol the biggest cash cow for state politicians could also be brought under the ambit of GST at the highest tax bracket. After states are compensated for forgoing alcohol revenues, the central pool will benefit with an additional ₹30,000 crores. Also, this was the time to impose a tax on digital services and e-commerce companies, rather than reduce PDS allocations to reign in the ballooning deficit, as proposed by an eminent agricultural economist.

Changed circumstances and new understanding require an innovative approach to policy-making. The government must finance a long-term study for developing a metrics for valuing farm eco-system services, whereby farmers are paid for services to conserve the environment in a way that ensures economic sustainability of the farmer family and India's food security. A simple example would be to pay farmers for rainwater harvesting or upkeep of a tree on their land. The tricky part though, is to devise a differentiating matrix for varying agro-ecology. For instance, a particular tree is valued differently in a rainforest and in a desert.

A systems approach is radically different from the present structure and past experience has repeatedly informed one that it would be foolish to expect the Indian Council of Agriculture Research to develop one. Having perpetuated a



Photo: Freepik

kind of agricultural practice, it cannot be expected to purge itself of it. Rather than lose another two decades to ensuring delivery, it is advisable to engage in a collaborative effort with a consortium of farmer organizations.

There is other minutiae that need to be addressed to make massive improvements. Consider the ambiguous provision for charging income tax on 'dairying', which should be removed or specifically clarify that it does not include dairy farmers. Dairying is a part of agriculture and, as per the Indian constitution, a state subject. The central government cannot charge income-tax on dairy farmers, all the more because tax collection from individual dairy farmers are statistically insignificant. Removing such quirks improves ease of doing business, even if not rankings by international consulting firms.

A suggestion that met with considerable interest at the ministry of finance meeting was on providing eggs sourced from backyard poultry for the mid-day meal scheme. Backyard poultry is about farmer

families keeping chicken at home. The benefits will be multidimensional; from protein for school children to no scope for adulteration; from less food miles from local food to families regaining self-esteem and developing the community spirit.

There is the potential to generate alternate employment across all 600,000 villages in the country. The enabling factor is not eggs but the process of sourcing eggs from marginal, small and landless farmers in the village. A competitive bidding process or allowing participation of commercial poultries will kill the very objective.

The finance minister completely understood and suggested that local sourcing be extended to other products for mid-day meals. However, the nutrition policy of India, increasingly dictated by private philanthropy and commercial interests will not allow it. The finance minister will soon realize that it is easier to subdue an uninspired opposition than it is to make the bureaucracy change its unbending ways. The budget should have been more than innumerable cautions of figures; it needed to be one of ideas and content. By this measure, Budget 2020 disappoints.

Just as Indian stock market is no indicator of the economy, the finance minister should be cautious of the other ritual of sycophantic businesses heaping praise in post-budget TV appearances. They are as hollow as they sound. ●



Ajay Vir Jakhar
Editor

twitter: @ajayvirjakhar
blog: www.ajayvirjakhar.com

**GOVERNMENT
MUST FINANCE
A LONG-TERM
STUDY TO DEVELOP
A METRICS FOR
VALUING FARM
ECO-SYSTEM
SERVICES,
WHEREBY
FARMERS ARE PAID
FOR SERVICES TO
CONSERVE THE
ENVIRONMENT
IN A WAY THAT
ENSURES
ECONOMIC
SUSTAINABILITY
OF THE FARMER
FAMILY AND
INDIA'S FOOD
SECURITY**

To the Editor

Time for 360° Perspective

Your position on “Expanding the Paradigms of Farm Sector Advocacy”, (Editorial, *Farmers’ Forum*, December 2019-January 2020) is extremely important. Neither the farm sector nor any other sector functions in isolation. Therefore, no perspective on the farm economy is complete without the linkages to the overall economy. Yet Union Budget 2020 does not try to understand the farm sector in the overall economy. It is more of the same thing, tinkering with allocations and really leading to no enduring good.

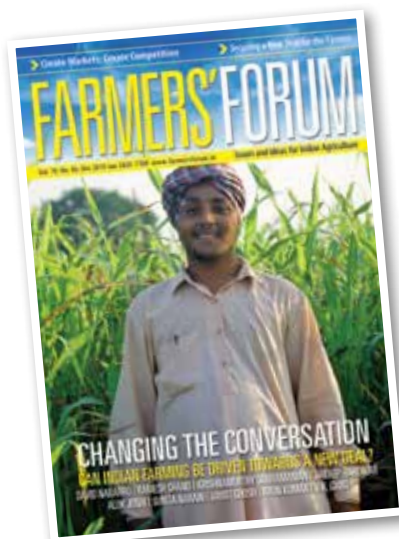
It is equally true that nothing subsidized can endure for all time. Therefore, “transformation of rural livelihoods across India, based on minimum support prices, free electricity and cheap fertilizers, is not sustainable”, as you so rightly point out, are not permanent solutions. The government must take steps not just to benefit rural livelihoods but ensure that policy measures promote sustainability and not a state of permanent dependence. It is about self-sufficiency and freedom of choice vis-à-vis what one grows and where one sells as well.

Rakesh Kumar

Bangalore, Karnataka

Government Abdicating Responsibility?

Notwithstanding all the accolades for the Union Budget for thinking about the farm sector and the allocations for PM Kisan, it needs to be appreciated, first by the farmers



Markets Critical for Change

It was interesting that Dr Krishnamurthy Subramanian expanded the discussion around agriculture to include markets in his talk “Create Markets; Create Competition” (*Farmers’ Forum*, December 2019-January 2020). He quite rightfully pointed out that “India focuses a lot on production in agriculture but not enough on markets that are extremely critical”. Enabling markets for farmers is by far the most critical aspect that India must focus on.

Joy Ghosh

Mumbai, Maharashtra

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a comprehensive
understanding of Indian
farmer concerns**

themselves and others cheering for such schemes and other cash transfers as a solution, that there is an undertone in “the trending dialogue around government reach”. This, as you correctly pointed out, in your editorial “Expanding the Paradigms of Farm Sector Advocacy”, (*Farmers’ Forum*, December 2019-January 2020), is something that “is actually paving the way for the government to slowly abdicate its constitutional responsibilities of providing primary health care, quality rural education, sanitation, farm extension, veterinary services, public transport and other public utilities”. The farmer needs income but the rural countryside needs all amenities that make for a decent life as well and rural India will not stand for being excluded.

Mukul Agnihotri

Ghaziabad, Uttar Pradesh

Learning from Diverse Food Systems

Bharat Krishak Samaj is to be congratulated for organizing the second and bigger “Food Systems Dialogue 2019” in New Delhi. It is important that BKS keeps this very important event going because despite the general agreement that all the food in the world may be enough to feed every one, there is need for concerted thinking around how to truly make a food system that can do so. The important thing is to keep engaging with the innumerable stakeholders across the world for meaningful collaborations.

Jagan Sharma

Erode, Tamil Nadu

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Shambhu Ghatak



From Farm Widow to Face of Change

Ujjwala Pethkar in conversation with Jaideep Hardikar

₹2 lakhs is all that it took to frighten Prabhakar Pethkar into taking his life. It was the money that the hapless farmer in the Vidarbha region of Maharashtra owed to his lenders. It was all that it took to make him opt for death rather than face the social ignominy in Kurzadi, Wardha. It was all that it took to make him forget his beautiful wife and two children for whom he had been a sincere provider till then. Only ₹200,000.

As his widow, Ujjwala had no time to mourn. She had no neighbours to turn to; no banker to give her a loan. Save for her brother, there was no one to share the enormity of the burden of being a farm widow with debts to pay and children to raise.

Yet Ujjwala Pethkar did this all. A decade after tragedy struck her life, she came to Delhi to tell her story to delegates at the 2019 Food Systems Dialogue. A story of grit and determination; of enormous hard work; and of a system that does not help farmers; certainly not women farmers.

She does not ask for much. Just a fair price for what she grows and on time, as she speaks in Marathi in an interview at “Food System Dialogues 2019, held at the India International Centre, Kamaladevi Complex, New Delhi, on November 11, 2019, under the aegis of the global ‘Food Systems Dialogue’ movement and the Bharat Krishak Samaj.

JAIDEEP HARDIKAR: *A welcome to you Tai (older sister). This august gathering is here to listen to you. There are some renowned economists, geneticists, members of the Niti Aayog... They have especially come to hear you speak. My first question: is this your first trip to Delhi and did you travel by air? Is it the first time that you took a plane?*

UJJWALA PETHKAR: Yes, yes.





FOOD SYSTEMS DIALOGUES 2019

NEW DELHI



The buzz was: “She should not farm, she should lease out. How can this mere woman think that she can take up farming? Is she capable of doing the big farm stuff?”

JH: *How did it feel coming to Delhi by plane?*

UJJWALA: This is my first time in Delhi. I had only heard about Delhi and today I actually arrived. Thanks to you.

JH: *How old were your children, Vrushali and Prasheel, in 2003, when you lost your husband?*

UJJWALA: Vrushali, my daughter, was seven and Prasheel was about three or four.

JH: *You had never done any farming till then. You did not know the economics of farming; you only helped your husband out. What were the biggest issues that you faced and what were the first obstacles that you encountered?*

UJJWALA: I had no knowledge about farming and, when I went into it, the big question was what should I farm and what technique would I use. I kept thinking for some time and after that I asked

those farming around me. Then I went to my brother's village for advice. I listened to everyone before venturing in. Everything was so uncertain and I was afraid about what would happen. How to sow, how to prepare the land in summer (for the crop in the rainy season), should I plough? How would I reap? I was unsure.

I went in for tilling (vakharni) at first but, by the second year, I realized that tilling meant more weeds on the farm while ploughing, which just turns the soil around, led to reduced weeds. So, in the second year, I wanted to go in for ploughing but that was an expensive process and I had no money. Ploughing had to be done by tractor and I only had a pair of bullocks to plough with. I could not hire bullock ploughs because their owners were busy with their own fields and were not available for hire to prep our soil.

People around me were another problem. They thought that, as a woman, I should not get involved

in farming but should lease out my farm. The buzz was: “she should not farm, she should lease out. How can this mere woman think that she can take up farming? Is she even capable of actually ploughing and doing the big farm stuff?”

When I went to them they would ask demeaning questions: “Can you do it, can you do all that work by yourself?” I would say: “No, not now but I will learn, take care of it gradually in the future. You just tell me if you are available for hire. If you are, just tell me what your charges are and plough my farm”.

JH: *Tai how indebted were you at that time? How did you plan to finance the debt? How did you raise money?*

UJWALA: I really had a huge debt because when in the last three to four years of my husband's life, the fields were unproductive. There were heavy rains. The crops were on low land. No bunds had been raised and our crops were swept away by the floods. We suffered losses and were saddled with lot of debt.

JH: *So how did you raise the money for farming?*

UJWALA: I lost access to the entire farm; four acres went off in debt settlement ...

JH: *You had to sell off four acres....*

UJWALA: I did not sell; the creditor just took my land and did not return it.

JH: *How much were you left with after that?*

UJWALA: I was left with five acres and I started farming these five acres. There was a well on these five acres and I managed to get it ploughed by hired bullocks in summer and then hired farm labourers to do the farming. In the beginning, I took a loan from one bank. I had used it to plant sugarcane on an acre or one and a half acres because the loan was for a sugarcane crop. That is how I got started.

JH: *Your children were small ... how did you take care of them and also manage the farm?*

UJWALA: I took care of them myself. I took care of their needs first and then did the farm work.

There was no one else to take care of them. I was all alone. I had a mother-in-law, father-in-law, older sister and brother-in-law but no one offered to help. Even today, no one cares. Single-handedly, I took care of things from the beginning and kept doing things on my own.

JH: *How long did it take to pay off the remaining debts?*

UJWALA: Four to five years.

JH: *When did you gain confidence in your ability to farm and become sure that you could make your farms productive? Also, how difficult are the farming system, the banking system and markets for women farmers? You mentioned that there were doubts about a woman's ability to farm. Why this feeling? I see plenty of female farmers in Maharashtra and in the rest of our country. They are definitely not the owners of the farms but they are the ones who are actually farming.*

UJWALA: Yes women are farming. While that is correct, there are many hurdles. The bank manager says that what they are doing will not work, even after one has paid off part of the loan or most of it. The manager suggests: Why do you not plant this? If I ask for ₹50,000, he flatly refuses, saying that it is not possible. “You have not been able to pay off the loan in two years now”. If government gives me a waiver, again he says: “You have not been able to pay off bank loans so why take another loan? Come later. We cannot give you a loan now”. This is how they discourage women farmers.

JH: *So you picked cotton, pigeon pea, soya bean? Do you yourself go to market to sell or sell it in the village itself?*

UJWALA: No. I hire a vehicle and go to the market to sell it to the trader. Even in the market, the trader never gives the government rate immediately. That is where we farmers lose out. The government should ensure the rate from the first stage. When we have a fresh harvest the trader pays us a lower price. Soya bean should get between ₹4,000 and ₹4,500 per quintal today. We get only



Photo: People's Archive of Rural India by Jaideep Hardikar



Photo: Vrushali Pethkar



₹2,500. We have loans, we have to pay daily wages to the labour and we have to sell as soon as we harvest soyabean. We cannot wait for better prices.

JH: *How many labourers depend on you now for their livelihoods?*

UJJWALA: There are between 500-600 labourers working on my five acres.

JH: *Do they work round the year?*

UJJWALA: Yes. I need to pay them. So I take my crop to the market as soon as I harvest it. The traders know that the farmer is in need of money and so they start with ₹2,500. In summer the trader pays ₹4,000 to ₹4,500 for the same soyabean.

JH: *Did you face problems being a woman working amongst men? Women are rarely seen in the cotton market.*

UJJWALA: Yes, there are problems all round. Yes women are rarely seen and there are only men around and then you have deal with the traders,

who are also male, who quickly decide the rates while transacting with other males. When they see a woman they ask aloud why they have to deal with a female. The woman is not taken seriously.

JH: *As you look back on these years, you do realize that your husband had a different approach to farming from yours. How and why are things different? What crops did you choose? How did you manage to stabilize your farm? Were you more careful with money or budget differently? How did you curb unnecessary spending? What is difference between the farm practices? Most importantly, how did you think about venturing into growing new crops?*

UJJWALA: To start with I really had no knowledge about farming. I only looked after the household and whatever we needed at home my husband got for us. Only after his passing did I gather the knowhow hands on, by working on the field myself. I was not aware of the need for expenditure planning and realized this only when I was faced with serious problems at the time of sowing.



Photo: People's Archive of Rural India by Jaideep Hardikar



Photo: Vrushali Pethkar

A good price should be fixed before Diwali. Prices of all inputs like fertilizers and seeds are jacked up exorbitantly at the time of sowing. Prices should be rationalized

I learnt then that financial planning has to start from early summer. I needed an estimate of how much money would be required for a five-acre farm, how much for ploughing, how much for fertilizers and seeds. Estimates for fertilizers and seeds were critical and one had to have the money at a particular time. The question was to manage to secure the funding because I had no money and the banks would not lend. Initially, I asked my brother for money.

The second thing was to reduce expenses and put in the farm labour myself. If 10 women were needed, I worked using only two and I kept working round the clock. The women finished their shift and left but I worked over time. That is how I managed.

JH: *One last question: If the farmer has to prosper what should our country and all these experts do? Let us have your opinion.*

UJJWALA: What can I say? People are thinking about farm issues. Farmers should be helped but the main thing is that the produce should get timely and good price. Everyone should get together before Diwali and ask for remunerative price for the farm produce for all the farmers and not merely for one crop. They should ask for higher prices for soya bean, pigeon pea, cotton, wheat or gram... whatever a farmer grows. A good price should be fixed before Diwali. The prices of all the inputs like fertilizers and seeds are jacked up exorbitantly at the time of sowing. Prices should be rationalized. ●



A vibrant green landscape featuring a series of terraced rice fields. A small, calm pond is nestled within the fields, reflecting the surrounding greenery. Several trees are scattered throughout the scene, adding to the rural charm. In the distance, a few small buildings and more trees are visible under a clear sky. The overall atmosphere is peaceful and idyllic.

**COVER
STORY**

**IN SEARCH OF AN
UNDERSTANDING:
Of Sustainability
with Farms, Economy,
Environment and
the Common Future**

Ajay Vir Jakhar



Bharat Krishak Samaj is a farmers' organization, trying to influence policies impacting farmer livelihoods and countering institutions that work for the vested interest with one principal loser: the farming community in its various forms. At the outset, I must confess to a personal failure. We should have been more persuasive about farming policy by influencing policy-makers and people who matter, to address what is really required on the ground to make this nation a better and a more prosperous place than it is today.

The crisis in rural India has been festering for decades and cannot be solved in isolation from the rest of the national and even global economy. Most farmer organizations have been trying to work towards solutions for farmers only. At Bharat Krishak Samaj we realized, along with some other organizations, that until we expanded the scope of advocacy to overarching things that impact farmer livelihoods, which could include corporate taxes and income tax, for instance – because unless the government increases revenues, it will not have the wherewithal to invest in welfare – all advocacy would be futile.

It is an interconnected world, farming is more than a food systems dialogue, it is more than food and it is more than agriculture. Even the import-export policy impacts farms. Non-tariff barriers



AJAY VIR JAKHAR
Chairman, Bharat
Krishak Samaj
and Editor,
Farmers' Forum
India

Slow Down, Find Humanity

Paul Salopek's 21,000-mile odyssey is a decade-long experiment in slow journalism. Moving to the beat of his footsteps, Paul is walking the pathways of the first humans who migrated out of Africa in the Stone Age and made the Earth ours. Along the way he is covering the major stories of our time—from climate change to technological innovation, from mass migration to cultural survival—by giving voice to the people who inhabit them every day. His words, as well as his photographs, video and audio, create a global record of human life at the start of a new millennium as told by villagers, nomads, traders, farmers, soldiers and artists who rarely make the news. Walking allows one to slow down and observe the world carefully. In Salopek's view, it can help us to rediscover our world.



Photo: Dinodia



Healthy farms should be a part of a healthy economy along with the realization that the economy cannot be healthy if the farms are not

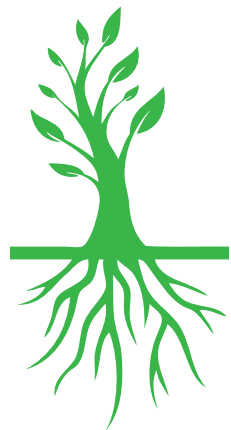
take their toll of farming and all those things must come into the discourse when one is discussing agriculture. The issues with the present policies of this government and those of the last government could be resolved if the distinction between the natural capital of the country and economic wealth are respected and managed.

The failure to do so has led to the steady depletion of natural wealth, further affected by pollution and environmental degradation. The failure of the government to consider the value of what is being lost and policies that could have changed it, is what needs to be addressed.

Essentially, one is staring at risks not of corporate failure but of corporate success. The issue is that corporates are succeeding but at a grave cost to the natural wealth. There are winners and losers and farmers happen to be the largest losers, amongst many other communities.

Paul Salopek, journalist and writer from the United States, a two-time Pulitzer Prize winner, currently walking the earth, crossed my village three or four months ago. He had walked from Africa through Afghanistan and Pakistan to India and has possibly gone on to Burma. He says: "Walking is falling forward. Each step we take is an arrested plunge, a collapse averted, a disaster braked. In this way, to walk becomes an act of faith".

That, in my vision, is what agriculture exemplifies: faith. That faith needs to be supported by better policies, it needs to be supported by better implementation. That is why all our dialogues must be with economists, environmentalists, scientists, research scholars, with farming solutions evolving out of overall solutions; healthy farms should be a part of a healthy economy along with the realization that the economy cannot be healthy if the farms are not. Where India stands economically today is a question that farmers need to understand before they can seek solutions. ●



Anatomy of a Recession: The India Story

Pooja Mehra



Photo: Dinodia

Many economists have actually said that India is close to a recession, if one does not go by the technical definition of recession, which is applied to economies that have already used all of their land and labour and capital resources. For a growing economy India, where there is scope to increase utilization of these resources and thereby grow the economy, is not growing at its normal potential rate. It is falling short of even that and, therefore, economists say that India is in a recession as a growing economy.



POOJA MEHRA
Economic
Journalist and
Author of *The Lost
Decade* (2008-18)

To focus more on the broader question of what the state of the economy is today, there is much talk about a slowdown in GDP growth, slowdown in manufacturing, of global sovereign rating agencies threatening to lower India's sovereign rating, which is already at the lower investment level. There is a lot about the central government being close to a default on its Constitutional guarantee to states to compensate them for the loss of revenue, as promised when the states moved from the previous tax regime to the GST regime.

What are all these signs of? If all of these things are happening in the economy, is the economy as promising as it is thought to be? Just a few years ago the narrative was about the India growth story. What was the India growth story? The reforms undertaken from 1991-2011 and some that started before 1991, which are not talked about as much, made India, given its large size and the promise of a big market, seem like a very attractive investment destination for foreign investors.

It was the promise that India would finally grow fast and increase the size of its markets. A lot of people living in villages, the farmers, were expected to earn more because they would get jobs in factories that in turn would be able to sell their products. That was the promise of the India growth story because of which a lot of foreign investors were bringing their money to India and investing here.

This was also a period of global boom and, from 2006 onwards, money was cheaply available to investors. When money is available at very low interest rates what does one do? One bets! Since the cost of money is so low and there is this economy

that promises so much and the cost of borrowing and investing there is so low, everybody rushes to bring money to India. Many market analysts brought out these reports about India being one of the most promising economies in the world and that is when the India growth story started.

Was all of this talk in thin air? No; there was genuine GDP growth. A lot of people were lifted out of poverty. Lives experienced material gain and changes. A cost of ticket to fly from Delhi to Mumbai in 1990s was around ₹10,000 to ₹12,000. Today, it could be just ₹4,000. There have been a lot of gains and that period was a very good one. Then came the global financial crisis and the growth story got interrupted. When that growth story got interrupted, the government and the Reserve Bank of India (RBI) and those in charge of the economy did quite well to take policy measures to ensure that India did not go completely off at a trajectory and the economy did not get completely derailed.

The growth story was interrupted but the economy did not crash. However, a phase, starting 2011 onwards saw some events, some political in nature, such as the 2G scam, the spectrum scam, the Commonwealth Games scam and such others, which led to a complete stoppage in decision-making in government. Certain decisions like trying to tax companies with retrospective effect, completely changed the mood. That promoted a policy paralysis and people began to question if it was a good idea to invest in India and investments began to slow down.

Three years later, elections were expected and by then people had lost faith in the government of the day but thought that the India growth story could be revived under another government. There was optimism that a new government, especially led by a chief minister who had a reputation for doing very well in his state would come and fix everything that was not working. In the first five years of this government people did not realize what was happening because there were so many policy announcements and every time there was a policy announcement, such as demonetization or GST, it was projected as big reforms.

There were complaints about people hurting due to these policy decisions but the country was told that this was in the interim and that India would soon recover and see a burst of growth. I think the biggest admission that all of this optimism was unwarranted and that things had started to go wrong came when, just a few months before the



Photo: Dinodia

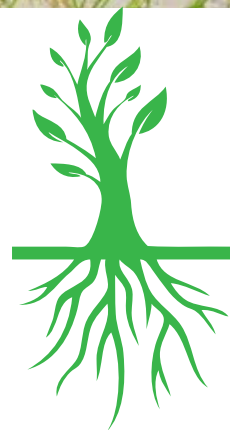
2019 elections, the interim budget announced the PM KISAN scheme. That was an admission that because we have not been able to fix the problems of the agricultural sector and there is rural distress, we will compensate the farmer with income support with cash payments to say sorry in some way.

By the time the election results came out, all of the accumulated policy mistakes of the previous government and the first five years of this government had begun to weigh down on the economy. So started the investment slowdown. When you have an investment slowdown people do not set up new factories, they do not expand existing factories, new jobs are not created, new incomes are not created, demand does not go up. Demand only went up when people in the government gave themselves heavy salary and pension hikes. In the first few years all of the extra money earned by people working for the government had been spent and there was no money available.

However, by then it was clear that not enough biscuits, cars or shampoos were being sold in the



Countries like Bangladesh and Vietnam are now doing so well in sectors such as garment exports that they are exporting more than India. Indian exports are losing out



country. People were not able to afford these at a rate that would warrant more investments in factories to manufacture them or expand. Instead, manufacturers started to reduce production, some companies even got rid of workers; they were reducing the size of the sector and a question mark began to hang alongside all the promises of the India growth story.

This was more so because, while India was busy with personalities, politics and policy mistakes, smaller countries that worked very hard got ahead of it. Countries like Bangladesh and Vietnam are now doing so well in sectors such as garment exports that they are exporting more than India. Indian exports are losing out to these smaller countries. When one starts losing market share – as has been documented by Prime Minister Modi's close friend, economist, Surjit Bhalla, on

how these two countries are doing better than India – one begins to lose out the entire market. The minute others are able to export more than one, their economies of scale kick in and they are able to grow much faster. Competing is going to be even tougher for India now.

The government responded to the situation with another announcement to counter this whole mess. It talked of a \$5-trillion economy goal. At the current rate India is growing at about five per cent. If India is to become a \$5-trillion economy by 2024, as the goal is, India needs to grow at 15 per cent. It is not likely that India will grow at 15 per cent between now at 2024. Therefore, it is unlikely to become a five trillion economy. Meanwhile, the economic potential that had fed national pride for a very long time has suffered. A lot of Indians, government and commentators believe

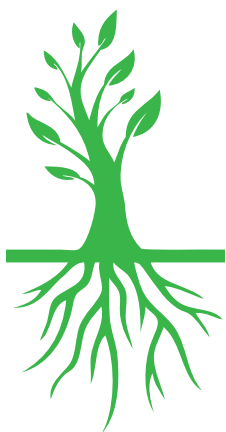


Photo: Dinodia

Many economies have tried to grow and taken steps to develop but did not succeed. They got stuck in what is called the middle-income trap

that India is destined to become this super power or an economic powerhouse but there is nothing destined about it.

There are so many economies in the world that have tried to grow and taken steps to develop and only three or four have been successful. A whole lot of other economies did not succeed and got stuck in what is called the middle-income trap where economies are not able to take decisions to grow fast and become big. Smaller economies, however, are able to take the small steps that are initially very easy to do. Bangladesh is doing so right now and beginning to give India a competition. Once economies get stuck in the middle-income trap, the per capita income does not grow fast enough and people do not come out of poverty. Indeed, more and more people may start falling back into poverty even if they

had managed to come out of poverty earlier. One accident, one health issue in the family can push a family back into poverty.

The stage at which India is today is that it had a lot of promise, a lot of potential for a very long time and for a variety of reasons, most of which is political, it did not do much about it. India's tensions were diverted to issues like politics and personalities amongst others and we sort of missed the bus. If India now brings the focus back to the economy and takes those difficult steps that need to be taken, it may still have a chance. If India does not, what will happen is that a very small section of the economy, most of which depends on the government spending, will still be fine but the rest of the economy will not do well.

If one is not doing well economically, the neighbours will not take one seriously. Nor will other big countries. That is when the Prime Minister will need go to a Leaders' Summit to negotiate till the last minute to sign a RCEP (Regional Comprehensive Economic Partnership) but walk away. Indians do not have much to feel optimistic about but a lot to be worried about. India must immediately focus on the economy. ●

Perspectives on India's Farming Crisis

R. Ramakumar & Harish Damodaran

In the original invitation, this conference was called 'Indian Farmer in a \$5-trillion Economy'. The Bharat Krishak Samaj thought about it for a month and it sounded ridiculous and changed the wording to 'The Indian Economy and the Kisaan'. "Something similar happened a few years ago when the Prime Minister said that India would double farmers' incomes by 2022. Bharat Krishak Samaj wanted to do a conference on 'doubling farmers' incomes' and that sounded ridiculous too. It was clear that it would never happen, given the policies of the government". Thus did Ajay Jakhar, Chairman, Bharat Krishak Samaj and Editor, *Farmers' Forum*, set the ball rolling at a panel discussion on the plight of the farmer – or for that matter anyone from rural India seeking a livelihood in the farm or in urban India – on January 9, 2020 at the Kamaladevi Complex, India International Centre, New Delhi.

Things had been changing in the countryside rather dramatically and somewhat pathetically. "Once the BKS decided to just look at the road ahead literally, the changing scenario revealed itself. Earlier, photographs of roads showed people travelling out of farms to cities in search of jobs. With jobs being lost in large numbers, people are wending their way back home, in a reverse migration phenomenon.

Takdeer toh wahi hai jo hum apni banatey hai, taqdeer hum likha kar nahi aatey (Everyone makes one's own destiny; One does not come with a pre-written destiny). Hopefully, we will make something interesting with our destiny", the BKS chairman said.

The presence of luminaries, immersed in the examination of agriculture, economics and the rural landscape, Dr R. Ramakumar, the Nabard Chair Professor for School of Development Studies at the Tata Institute of Social Studies and Harish Damodaran, the Rural Affairs and Agricultural Editor for the Indian Express, made for an inspiring first session, moderated by Ajay Jakhar. The second part of the panel discussion



R. RAMAKUMAR
Nabard Chair
Professor
for School of
Development
Studies, Tata
Institute of Social
Studies



**HARISH
DAMODARAN**
Rural Affairs
and Agricultural
Editor, *Indian
Express*



Photo: Dinodia

featured T. K. Arun, Editor, Opinion, The Economic Times; Arvind Mayaram, Financial Advisor, Government of Rajasthan and Former Union Secretary; Dr Bharat Ramaswami, Head of the Department of Economics, Ashoka University; Dr Rathin Roy, Director, National Institute of Public Finance and Policy, Ministry of Finance; Aunindyo Chakravarty, television anchor, independent journalist; and Pooja Mehra, journalist and author.

AJAY JAKHAR: *We will start with Dr R. Ramakumar, who has done enormous work on agricultural credit and rural economy; researching, writing, speaking. How would you characterize the contemporary crisis in Indian agriculture? What are its origins? Can one put things in numbers?*

R. RAMAKUMAR: What we mean by contemporary crisis is something that has been



From November 2011, the price data for some foodgrain, pulses and other crops, shows a dip in the wholesale price index. Demonetization was a proximate cause

unfolding for between eight and nine years now. I am not talking about the crisis that had begun even before. There are long-term and short-term aspects to the crisis. If one looks carefully at the terms of trade in agriculture – not the agriculture industry terms of trade – terms of trade in the sense of prices received by farmers and prices paid by farmers, there is a long-term trend, where one notices improvements in the terms of trade till about 2011-12. From then there is a sharp decline in the terms of trade. There are many reasons:

1. The world trade in agriculture, which was booming from 2003 to 2010-11, began to flatten out
2. World agricultural prices began to crash

3. There was austerity in Indian spending in agriculture.

These factors combined to contribute to the terms of trade going against the farmer after 2011. Also, from November 2011, the price data for some foodgrain, pulses and such other crops, shows a sharp dip in the wholesale price index. Demonetization was a proximate reason for that kind of sharp fall in prices happening after November 2016. It has now picked up but probably reached the October 2016 level. Thus, there was this period between November, 2011 and today, when prices really went down, before picking up slowly. Growth has to restart.



Imports have increased very sharply for crops like pulses, even when the country is trying to encourage domestic production with higher minimum support prices. Wheat, in which the country is considered self-sufficient, is now imported: between 1,600,000 metric tonnes and 1,700,000 metric tonnes every year. Thus, there is a proximate cause around 2016 and a longer-term trend of declining terms of trade, beginning in 2011. This leads to a very sharp fall in profitability, particularly for small and marginal farmers.

Meanwhile, imports have increased very sharply for crops like pulses, even when the country is trying to encourage domestic production with higher minimum support prices (MSP). Wheat, in which the country is considered self sufficient, is now imported; between 1,600, 000 metric tonnes and 1,700, 000 metric tonnes every year. Thus, there is a proximate cause around 2016 and a longer-term trend of declining terms of trade, beginning in 2011. This leads to a very sharp fall in profitability, particularly for small and marginal farmers.

Data from my work with the Commission for Agricultural Costs and Prices (CACP) shows that if the farming community is divided into small and marginal farmers, large farmers and both together, the fall in profitability is seen to be the sharpest for small and marginal farmers. Large farmers have managed because of their economies of scale and their cost of production per hectare being much lower. The key is the fall in profitability in small and marginal farming that creates the crisis. There are other aspects to it. There are marketing aspects, credit aspects and so on. These have been the real pinch for the farmer.

AJ: *Credit and farm loan waivers are very hot topics that you have examined. Farmers demand farm loan waivers because of terms of trade not being right for them. Economists, on the other hand, people who write in English newspapers, people who are vocal, people who decide policy, think farm loan waiver is a bad idea. The BJP government at the centre has said so time and again but some BJP-ruled states like Uttar Pradesh are resorting to farm loan waiver. This phenomenon is happening. The problem is that these waivers benefit some farmers but not very large sections that do not fit the criteria and get excluded.*

The Bharat Krishak Samaj is doing a study for Nabard, analyzing farm loan waivers for the state of Punjab, Uttar Pradesh and Maharashtra and analyzing who got left out and how the banking structure got impacted. The question, Dr Kumar, is that if the banks taking an annual ₹100,000-crore haircut for the last five years is justified by economists, the government and the bureaucracy, why not the farm loan waivers? The question is not whether something is good or bad; things are good or bad in relation to other aspects and this question is in the context of agriculture credit supply.

RR: Farm loan waivers are undoubtedly like band-aids on wounds. They do not resolve the basic



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There are inherent disadvantages in loan waiver schemes, however much one tries to target them. The challenge is to improve profitability in agriculture

problem. Typically, they do not reach the small and marginal farmers, who predominantly borrow from the informal sector and less from the formal sector. The reverse is true for the large farmers. Since farm loan waivers cover only formal sectors, they do not reach the small and marginal farmer to the extent that they should. Also, many farm loan waiver schemes have cut offs with respect to land size; usually about five acres. A lot of farmers in dry land areas have more than five acres but are not large farmers. They lose out in terms of getting benefits of waivers. These are certain inherent disadvantages in all farm loan waiver schemes, howsoever much one might try to target them.

The key challenge then is to improve profitability in agriculture. Farm loan waivers do not help in that. What they do is to allow the firm, in this case the farm, to have a small reduction in the otherwise huge burden of debt. In that sense farm loan waivers are useful; they provide immediate relief to a farmer suffering from a sharp loss in profit and under a debt burden; who is not able to repay. In that sense, farm loan waivers have a role. The problem is that given



the structure of the credit market and land market, however much one designs the scheme, it will end up excluding large numbers. That does not mean that farm loan waivers are bad. I also do not agree for an instant that farm loan waivers lead to the moral hazard of farmers not repaying over a period of time. There is no such data on moral hazards increasing in the aftermath of a farm loan waiver.

There is another argument that farm loan waivers will lead to decline in credit availability to farmers from the formal sector itself. That is the banks' problem. Banks do not give farmers new credit in the next year. For example, in the 2008 waiver, the CAG found that the 33 per cent beneficiaries' of the farm loan waiver did not get what is called the eligibility certificate, which would make them eligible for next year's fresh loan. This is the banks' problem and not the farmers' problem and does not lead to any moral hazard. There is no evidence to that effect. In fact, agriculture has the lowest NPA across the agriculture service industry. It is about seven per cent now where the industry is at about 22 per cent. It has fallen sharply over a period of time. Even after the 2008 debt waiver, the default rates in agriculture did not increase beyond one or two percentage points. I do not think all those are valid reasons to oppose farm loan waivers.

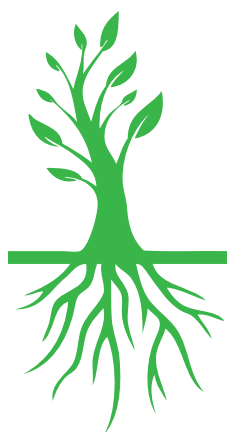
Finally, an argument is made that it burdens the state finances. I do not think that is the major issue because in most cases Reserve Bank of India or the government of India do not allow any state to borrow more than three per cent of the state domestic product. States find money for loan waiver schemes by internal rearrangement of funds. For example, Maharashtra has found some ₹18,000 crores till now to finance its loan waiver. It does not lead to an increase in fiscal deficit; theoretically it cannot. By definition, it cannot because it is stipulated at a particular point. However, while farm loan waivers are important and provide immediate relief, they are not the ultimate solution. There is need to invest in infrastructure, research and markets to improve profitability in agriculture. The waiver is just a short-term step to provide some relief till the longer term or medium term goals are achieved.

AJ: *Last year the governments of Maharashtra and Madhya Pradesh spent more than ₹1,000 crores buying onions. This year the central government is spending ₹60 a kg for onions. What is your take out from this?.*



RR: I always run away from questions of the 'can you tell us three things' (laugh) kind. I think there is a serious problem with how we look at agriculture. Some of the things that we mentioned actually provide a perspective on agriculture. Without a correct perspective one can do different things but something will get drained out, something will happen, something may not happen. There is need to see agriculture, the small and marginal farmers and their profitability as the central goal of farming. Profitability in agriculture is falling. The data is clear on that. How does one increase the profitability?

First, unfortunately, there seems to be only one solution to this, which is on the marketing side. Reform the PMC Act, the Essential Commodities Act and the price formation will be more favourable to the farmer, who will see better recovery of price. While there is a role for this approach, it is often overplayed. The marketing aspect is overstated vis-à-vis increasing the income of the farmer. A lot has to be done and can be done on the production





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India invests about 0.04 per cent of its agricultural GDP in agricultural research. Developed countries invest an average of 3 per cent

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side that is often forgotten. Cost of production has been allowed to go up; fertilizer cost is up. There is need to look at the input side more carefully to examine how cost of production can be brought down. Of course, there is need to examine marketing aspects too, which is why a correct perspective is necessary. As things now stand, there is an over emphasis on marketing aspects in trying to resolve some of these problems.

Second, there is need to invest heavily in storage; on warehousing and refrigeration chains and in transportation. Putting vehicles in place is not enough though. There must be a clear sequence of where the produce should reach from where. Speaking on the onion crisis, many say that it is produced in Madhya Pradesh and has to go Delhi in the first week and then to Kolkata in the second week and if such a sequence works out exactly, the problem is resolved. Things do not move in this fashion on the designated days.

A lot of policy recommendations is like throwing stones in the dark and one does not know what the

impact of these policies would be. There is need to play a little on the side of caution, there is need to support the farmer, there is need to make sure that small and marginal farmers get inputs at affordable costs and get credit as well. Instead of diverting all the credit to big companies or agro business companies and such others, there is need to ensure that irrigation facilities expand, that the research system puts out better seeds, that the extension system expands and such others. Yet very little effort is made in these directions.

Agriculture research is another neglected area. India invests only about 0.04 per cent of its agricultural GDP in agricultural research while developed countries invest an average of three per cent of their agricultural GDP on research. India invests 0.01 per cent of the agricultural GDP in agricultural extension and this should be 0.05 per cent at least. Things have to be done as fundamental building blocks of good agriculture. PM KISAN is a cop out. Here is a government that began by saying that it would double the incomes in agriculture by the end of the

fourth year. Farmer incomes have probably come down instead of doubling and the government came up with a PM KISAN scheme and that too because the Congress Party was setting up a NYAY scheme about which it had prior information. So it was all a game played for the elections and there will be efforts to withdraw the scheme and play different games to dilute PM KISAN now that elections are over. This is not the way to run agricultural policy.

AJ: *This is for Harish Damodaran. One question that the central government and the public are grappling with is whether India is a food surplus nation, given its overflowing granaries. Yet, the onions one had for lunch today were from Germany. Is this what should obtain in a food surplus nation? Also, how would you look at the impact of the climate change looming large? How are consumption habits changing? Is India genuinely food surplus? Is there any need to restructure policies on food security, looking ahead in terms of climate change and the changing consumption patterns in a growing economy?*

HARISH DAMODARAN: I believe that India is structurally surplus today. The ability of farmers to produce more in response to price increases is far higher today than it was 20-30 years ago. There are many technologies and better information and such other things going for India. There are, however, severe climate events that have probably never happened and which have impacted production. Production is coming down because of rains; a rainy day that one is not prepared for, literally. Why this shortfall is happening is not clear. Is the shortage in milk structural? Is it because the farmers are continuously getting very low prices over the last three four years and have cut down production. Earlier one had 20 cows and now only 10; one does not feed the calf but only the milch cow. Is that the reason or is it because of unprecedented rains from late August, September, October up to early November. The grass is growing poorly and the dairy says that the grass being fed to the cows has little dry matter. It has more moisture.

There is a lot of talk but one is not sure whether the current supply shortfall across commodities is structural or weather induced. By February-March one will have a very clear idea and, if the shortfall is because of structural reasons, it will reinforce my faith that farmers respond very actively to price signals, much more than industry and much faster. For example, if copper prices are high it will take a long time to discover new mines to increase

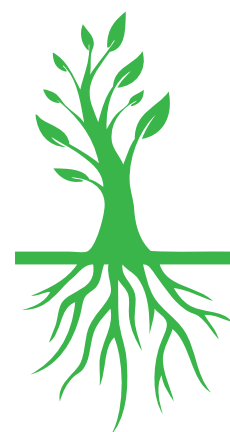


production. If crude goes to \$100, discovering oil fields and developing them will take time. A farmer can respond much faster. I am pretty sure that if there is a bumper crop of onion, next year at this time there may be no talk about onions.

India should be prepared for a fact that it is a marginally surplus nation. It has been a net exporter of milk powder since 2011-12 and this will be the first year when that India will be importing again. These indicate a marginally surplus kind of situation and the policy has to evolve accordingly. Also, agriculture should not be treated as the job of farmers meant to produce wage goods for industrialization. A farmer was once instrumental in financing industrialization and now there is the belief that it is the farmer's job to ensure that the rate of inflation remains low. It is not so and the farmer should be considered as any active economic agent working for personal gains and not as a passive person supplying cheap food. How is the farmer doing? How much is the farmer earning? While doubling the farmers' income is a great idea, the farmer must be considered not just as a producer but as a consumer as well.



Photo: Pixabay



There is the belief that it is the farmer's job to ensure a lower rate of inflation. The farmer should be considered as any active economic agent working for personal gains

India is also a structurally surplus country and there are many technologies that enable this and make the diffusion of technology faster. Many farmers use laser levels that enable water saving. There will be rapid spread of technology and it is demand that may well be the problem, rather than supply.

As far as climate change is concerned, Dr Rajbir Yadav of the Indian Agriculture Research Institute (IARI) believes that yields are going up because of higher carbon concentration in the atmosphere. He is wondering how much further can it go up. A point may come where there is so much pollution that clean sunlight will not be available. A friend of mine in FAO, Afghanistan, said the cauliflower you get there is massive and white only because of the clean sunlight. Lack of sunlight could be an inhibitor but given the progress in the science

of genetics there may be a counter to the effect of climate change. I am not, however, saying this as an expert.

AJ: *You think fear of climate change is over stated? You do not see India as a food insecure nation?*

HD: I am not saying climate change is overstated, I am saying we do not know exactly. The fact is that the yields are increasing. How is that happening? It is not that the entire data is doctored. I do not know whether genetic factors or something else is at work.

RR: I agree with the point about the structural surplus but I want to qualify it by saying that it varies across crops and regions and one should take note of this. Milk is a commodity where there is some export but India is still not a big importer or exporter; it is a marginal player though it will reach a surplus stage soon. That I agree with. In terms of



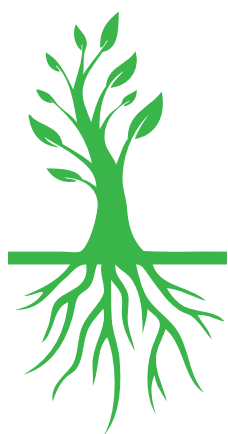
Photo: Pixabay

cereals, a little more caution is required. There are two or three reasons for this.

1. Adding the projected foodgrain demand, both direct and indirect – seed, feed, wastage, industrial uses on the one hand and direct consumption on the other – the Niti Aayog says that India will need 355 metric tons in 2033 while it is currently producing about 285 metric tons. There is long way to go and the country is not quite in a surplus situation from this perspective.
2. Calorie deficiency, given the poor cereal intake, is still an unresolved issue in India. For the poorer sections of society in particular, calorie deficiency is a serious issue and the nutritional requirements are yet to be met.
3. India continues to import wheat, for instance, off and on. There are some crops such as non-Basmati rice, wheat or maize, which are being imported at different levels though matters are becoming more regular.
4. Finally, the consumption data in the 2011-12 and 2017-18 period shows an interesting shrinkage of consumption. It is not just the supply side, what

is happening in the demand side is important and one can see a squeeze on the consumption budget of the poor. Consumption expenditure on food in 2011-12 and 2017-18 shows a fall of ₹50 per person in real terms for food consumption. Thus, demand is also being squeezed. That is why it looks like a surplus on the other side.

AJ: *Harish Damodaran, you talked of consumption expenditure. In the current state of the economy, there are clear signs of a decrease in consumption expenditure by households, rural and urban. The government is pushing a supply side solution by corporate tax cuts. There is even talk of reducing income-tax in this budget and things like that. Looking at the economy in totality, do you think the government should increase its expenditure on MNREGA or increase allocations for PM KISAN? Would that be a better way of getting money flowing into the economy or would it be better to give tax cuts to a few corporate houses and hope they will put up more industries? The question is why will anyone put up an industry if there is no demand? What is your position on this?*



Corporate rate tax has its own merit but is not going to stimulate the economy now. It is okay as a structural reform

HD: Any day it is better to stimulate rural consumption. It is very simple. If I give ₹100 to myself, I will not spend the entire money. I will put aside some but this money given to a person in rural areas will result in the entire money being spent. Corporate rate tax has its own merit but is not going to stimulate the economy now. It is okay as a structural reform and if the corporate tax rates in other countries are 15 per cent or 25 per cent, India can align its tax rates accordingly. This structural reform will not stimulate investments. Also, as you correctly point out, anybody who invests will look at the size of the current market and not at what may happen 30 years from now.

When Maruti set up his first plant, it may have thought that it would sell 30 lakh cars but when one sets up a plant one does so on the basis of the current scenario. One takes a call on tomorrow based on today's reality and if today's reality is very depressing, one does not invest and take a gamble. To answer the question, any day it is better to stimulate rural economy and there is definitely a case for increasing PM KISAN much more than an income-tax rate cut for people like me.

AJ: *To look at an aspect of farming other than the economy, there is a lot of confusion amongst farmers and urban people over the difference between conventional farming, organic farming and zero-budget farming. Can you share your thoughts on them? Many organic farmers are also upset by those propagating zero-budget farming, which even the government and the Niti Aayog have talked about.*

HD: You will be able to explain it in a much better way than I (laughs). You are a farmer. I absolutely have no idea about zero-budget natural farming. Subhash Palekar has said that earthworms have come from abroad (laughs).

RR: Beasts from Africa!

AJ: *Does agricultural research and development expenditure have any co-relation with the budget announcements around zero-budget farming? Does*



Photo: Pixabay

the government think that India will achieve its food security goal, achieve farmer livelihood through zero-budget farming and that there is no need to invest more on agriculture research and development? Regrettably, around 50 per cent of research posts and 50 per cent of the state extension posts are vacant. What are your thoughts on that?

RR: The Pusa Institute has been without a full time director for more than five years. This is the biggest scam any institution has pulled off and at the Pusa Institute, which has given us the wheat revolution and all the Basmati varieties. It is the same case with many other institutes. Who will invest in research, especially in many crops that are not amenable to hybridization if the public sector does not? For vegetables and some others, there are DuPont, Pioneer or Monsanto and many private players but there are a host of lost crops that are mostly self-pollinating varieties and those are huge. Who will invest in pulses, for example? Even within hybrids, a lot of hybrids can come out from the public sector system itself. I do not think the private sector has come



India is feeding its animals too much of compounded and expensive cattle feed though there are fodders that can be grown by the farmers that are rich in crude protein

up with the kind of hybrid bajra and such like that the IARI has. Yet nobody has taken it to the field. The returns from public sector research are huge.

Amongst my favourite examples are hybrid fodder varieties developed by the Tamil Nadu Agricultural University. They are the future. India is feeding its animals too much of compounded cattle feed that are far more expensive whereas there are these fodders that can be grown by the farmers themselves that are very high-yielding and very high in crude protein. Such varieties have been developed by the Tamil Nadu Agricultural University and commercialized by a company called Hatsun Agro Products and many farmers are now growing these hybrids. This is another way of doubling farmers' incomes by bringing down the costs. Farmers will invest in such cost saving measures and when prices are good because they want to make profits both ways.

AJ: *There is a lot of scope but farmers have felt that agriculture research institutions have let them down. They could have done much more. The French mathematician, Jules Henri Poincaré (1854-1912) said: "Science is facts; just as houses are made of stone, so is science made of facts; but a pile of stones is not a house; and a collection of facts is not necessarily science". Dr Ashok Gulati, an eminent agriculture economist, to whom I often go for advise, believes that the public distribution system must be addressed to manage the ballooning budget deficit. Dr R. Ramakumar, what are your thoughts on that?*

RK: Everybody loves to attack the PDS but I would not fall for that. I am a great supporter of the PDS. A lot of these issues related to inflation, food prices, farmers prices and such like have cropped up because the country deviated from the particular kind of consensus of the 1960s as a part of the National Food policy. It was decided that India would have both a remunerative price for the producer and an



Photo: Dinodia

affordable price for the consumer. Food subsidy was the instrument used to create this balance between a good price for the farmer and good price for the consumer. It was not a complete success but a partial one. It is true that in some states the PDS works very well and in some it does not work at all.

Just as procurement has a role, MSP has a role on the production side, while PDS has a very important role on the distribution side. Private trade will never be a substitute for PDS for moving foodgrain from the surplus to the deficit areas of the country. There is need for a system like a PDS and there is evidence that it is working. It has provided a downward pull on consumer prices; not fully but partially. I did not get the 'pile of stones' connection.

AJ: *In the sense that just because you have some figures, it does not mean that you have the story. You need insights to get a story out of the facts. That is the context.*

RR: I do believe that there is a scope for expanding the PDS. For example, if pulse production is to be improved in India, one important incentive it would need is better MSP, at least in the short term. After offering good a MSP, the pulse will have to be procured. Then comes the question of what to

do with the procured pulse. There is a good case for including pulses in the PDS; certainly so in the short term. I am not saying that the process is corruption free and works perfectly. It is not leakage free but the leakages have come down over a period of time though significant leakages exist. PDS is a very important instrument in the present context and cannot be substituted by a cash transfer. Ask consuming households across the country and they will clearly say that they would prefer food over cash.

Cash has other implications with respect to intra household questions of inequality. In fact, one sheer consequence of moving from kind to cash is the rise in liquor prices due to liquor consumption but also rise in food prices because private trade is not going to substitute PDS by increasing supply as demand picks up with cash transfers coming in. Earlier, PDS would bring in that produce to the deficit area now private traders have to bring it to the grocery shop in that deficit area. As long as that role is played by the private sector, inflation will happen there and the real value of the cash transfers will diminish in no time. These are critical administrative issues that need to be taken care of. That is one reason I am not a fan of PM KISAN.



AJ: *That is another reason why the government would tend to withdraw from other welfare schemes when they give cash.*

RR: The total sum talked about is ₹75,000 crores, which would have to be put into rural areas for infrastructure, marketing, research and so many things. I agree that cash is a good driver of demand but, having said that, it is not advisable if cash transfers are treated as a substitute for infrastructure improvements and money is diverted away from such critical requirements in the agricultural sector.

AJ: *Harish Damodaran, talking about cash transfers and what the government is trying with the fertilizer subsidy through the direct benefit transfer system for fertilizer payments, many organizations are upset about it. What are your thoughts? The central government is giving fertilizer subsidies and states like Punjab are giving free power. Going forward, are these sustainable economically or environmentally? How should the present regime manage it? Is there a better way of delivering these subsidies? Specifically with fertilizer subsidies.*

HD: There should be some kind of price control for any farm input because the nature of farm inputs is very different as they are consumed within days. Urea is used in 15-20 days and again after two months. Any commodity consumed in a matter of a few days is open to price manipulation, which is exactly the opposite of when the farmers are trying to sell. The government should keep enough stocks, a minimum buffer and the rest should be a matter of detail. Is rice or wheat to be given at ₹2 a kilo? Should urea prices be kept ridiculously low or a little higher?

With pulses, the main thing is to have enough supply. Thanks to the National Agricultural Cooperative Marketing Federation of India (Nafed), there are four million tons of pulses in stock or else pulses would have been costly like onions. One does not realize how important were those four million tons, procured for domestic consumption. However, the procurement could have been better managed perhaps.

Overall, India provides a real opportunity for farmers. If farm incomes rise, farmers can produce and earn more and generate demand for the economy. The farmer's task should not be restricted to keeping the consumer price index under four per cent. It is not the farmer's responsibility to ensure that steel plants are built and steel used and wage goods are

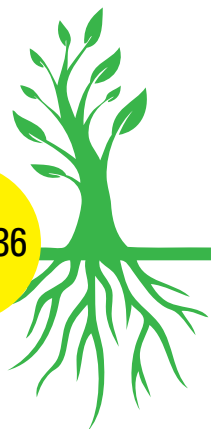


Photo: Pixabay

kept low. The farmer is someone who will consume all the cement and steel and many other things. The farmer's aspirations are far higher than ours.

AJ: *Are policy makers in the bureaucracy or members of the scientific community, whom you get to meet, talking about shifting subsidies to payment for farm ecosystem services? For example, a farmer could get paid for planting and nurturing a tree, though at different rates depending on the agro-climatic region, ranging from the rainforests to deserts.*

HD: I would suspect the intention and so would any farmer. Even when the farmer receives cash the intention is suspect. It is like the National Population Register. It may be a good exercise but the suspicion is around what the government would do with this data? The problem is not with sharing the data but doubts about how the data would be used. It is a trust deficit. Instinctively, even I will say that PM KISAN looks shady. Ultimately, it all comes down to intention. The farmer is a very practical person and does not insist that the urea be sold at a certain rate only that the urea be available. It is the same with farm credit. These should all be reconsidered without creating disruption.





It is the time to open up the markets and scrap the Essential Commodities Act, at least as far as controls go. Give farmers the freedom to sell to anyone and anywhere

There is too much disruption even in the economy with GST, demonetization and now the CAA. All economic agents need some certainty. Things must be tried out; does this cash transfer work? I believe it is the time to open up the markets and scrap the Essential Commodities Act, at least as far as controls go. Give farmers the freedom to sell to anyone and anywhere. Prices may go up but something worthwhile might come out of it. Traders should have more freedom to store. Why will one construct a modern warehouse if the government limits the storage to 10 quintals? Who will invest in these necessities then?

AJ: *Harish Damodaran, what about the Prime Minister's Crop Insurance scheme? The government is spending ₹20,000 crores, which the private sector and the government insurance companies are walking away with. Farmers are upset. Do you think we should scrap it till we have*

a better scheme or keep burning ₹20,000 crores every year?

HD: A scheme in the name of the Prime Minister should receive the entire funding and the premium subsidy from the centre. If the state government is expected to pay 50 per cent of the subsidy and should do all the other work, why call it a PM KISAN scheme? There should be about four or five such flagship central government schemes, 100 per cent financed by the centre. This scheme has failed only because the premium subsidy was not paid in time and such things. Obviously, the insurance companies have made good money. A lot of general insurance companies did well in last three or four years basically on the back of the PM Crop Insurance scheme.

SITA (Audience): *I am a journalist and a writer and my question is for Dr R. Ramakumar. You said that there is an over emphasis on addressing the*



marketing aspect whereas the emphasis should really be on production. Does this have to be an either or situation? If you increase production without marketing issues in place there will be another kind of problem. Harish pointed out that yields have been going up. How do you balance that?

RR: I said the marketing aspect is over stated. Often, the way agricultural policies are put up in budgets and other documents, shows single-minded attention on marketing. For example, the argument is that if you reform the APMC Act, things will improve automatically, for example. APMCs are big players and efforts to create private players outside the APMC have failed miserably. No private markets have come up outside any APMC and there is need to match the scale of APMC mandi, to actually get private markets going. The clear reality is in front of us as Maharashtra tried by simply changing an APMC Act, which I have looked at very closely, to create private markets. The private market guy comes and sits outside and there is no way he can match the scope and scale of the APMC mandi.

SITA: *The rules are still skewed towards APMCs?*

RR: If private markets want to come in Maharashtra, there is no legal obstacle. They are not coming. Reliance Fresh tried to procure directly from farmers but closed that system down long back. They think this is not where they are going to make profits. They will shut down most collection centers across rural India in terms of perishable vegetables. These are the lessons learnt over the last few years. There is need to work both on the production as well as the marketing side and not to put all the eggs in the marketing basket. That is what I wanted to share.

ARVIND (Audience): *I work with the International Crops Research Institute for the Semi-Arid Tropics. I was hoping that you would talk about crop residue burning. I read a newspaper report saying that the government is contemplating a MSP mechanism for rice in a few districts, which will force the farmer to diversify to other crops. Your thoughts please.*

HD: One cannot force any kind of diversification. One can say that Punjab and Haryana should move away from non-Basmati paddy in the long run but what are the alternative crops? Punjab farmers do not want to produce kharif maize. They want to produce spring maize, which ends

This year the Cotton Corporation of India will make a killing on the kapas that it has bought; Nafed will make a killing on pulses

up using more water. They will not diversify just because they are asked to. They will diversify for their own benefit and this is what policy must address. One starts off by asking why the farmer is burning the aftermath. If the farmer is told that there will be no procurement from Sirsa or Bhatinda, how is it going to help? It will not. Instead, the farmer could be encouraged to grow more maize perhaps because there is the need to feed mills there and may be the government should stock up maize.

This year the Cotton Corporation of India, for instance, is going to make a killing on the kapas that it has bought; all the good kapas is stocked by it. Nafed too will make a killing on pulses. Had the NDDB stocked up milk powder, it would have made a killing this year. It is fine to encourage diversification – Punjab played a very important role during producing rice because it was one of the few states with irrigation – but it must benefit the farmer. Haryana does not produce much of non-Basmati rice; it is more Basmati. Look at the farmer's point of view and not only the policy-makers' point of view.

AJ: *It needs to be emphasized that the Agricultural Research Institutions asked the farmers to burn and clean the fields and all of a sudden the Supreme Court and Delhites have woken up to the pollution to stop. Stopping a process that was encouraged for different reasons also takes time. Punjab farmers want to stop the burning but all policy must be sustained. The Punjab farmer was pushed down a road and getting off that road will take time.*

HD: Today there are some 15,000 happy seeders that will burn more diesel. Is that better? Farmers meanwhile will have to invest in such equipment that they will use for no more than five days. It does not make sense. Surely, there are better ways of doing it.

AUDIENCE: *I am delighted to hear you praise the public distribution system. There was also*

talk of mid-day meals, which have very positive implications in terms of use of the surplus grain that is bought, amongst others. Perhaps there is a way to give further benefits to farmers by way of increased prices. At the same time, India's huge concern around malnutrition could be addressed if there was a mechanism to diversify commodity within the ambit of the PDS. Any comment on that?

AUDIENCE: *Ajay Jakhar said in one of his articles that consumers are paying a very high price but farmers are not getting it. We are not looking at marketing reforms in an aggressive way. How does one bridge this gap of prices that farmers are getting and the consumers are paying? What is the solution from both of you?*

AUDIENCE: *A village connected with a city is very prosperous as its produce comes to the city. If all villages are connected and agro ecological services provided by the farmers are compensated, the farmer income will more than double. What is your take?*

HD: Frankly, the farmers' share of the consumer price today is higher than what it is used to be 20-30 years ago. For example, in the case of onion, many farmers have made money this time and many of them have stored the onions in very primitive structures and they have actually made money. I know many farmers who are making money even on tomatoes in Kolar and all these places. The farmer is getting 60 per cent of the consumer price for milk in Gujarat; even the private dairies. In fact, the share of the Indian farmer in the consumer rupee in India, is far higher than in the United States of America or any other countries.

AJ: *Are you saying that the farmer's share of the consumer price in India is higher than what obtains in the USA?*

HD: The consumer price is lower in India but the farmers' share of the price is higher. However, since we are talking about a three or a five-acre farmer, it does not add to the person's income.

AJ: *Do you think the share of the farmer is higher because we do not have structured value chains as in the USA, where there are large organization? Do they bring down the farm gate prices for farmers?*

HD: Ultimately all the air-conditioning, electricity, the girls and boys smiling at the



counters, they all cost money. If the milkman sells ₹2,000 worth of milk everyday, the money rotates everyday. On an investment of ₹2,000 at the start of the month even if one gets a return of ₹100 a day, at the end of the month it adds up to ₹3,000 on an investment of ₹2,000. It is a fantastic return. The small retailer is able to survive because of very high rotation – people selling milk, bread and Maggi noodles and such like – because the system is very efficient given its very high capital rotation. If you look at the entire system, from the farmer to the small retailer, it is not an inefficient system.

There may be physical wastage but even waste gets sold. Sometimes there is need to come down to earth and say that the trader is making money. Farmers today are definitely making more than what they were making 20 years ago and they are more aware. There are many farmers who sell very opportunistically. Things have changed from Sir Chhotu Ram's¹ days. They should do much better and there is definitely scope for things like Farmers' Producers' Organization and the time has come to definitely do away with all the stocking restrictions. Today if you ask me to name one sector that has bottomed out, it is agriculture. I think the worst is over.

AJ: *It cannot get any worse. Is that what you are saying?*

HD: No, I do not think that the economy has bottomed out. This is the right time for the government to announce and put an end to all restrictions like in exports. That will really invite large-scale investments; investments into warehousing and such others and bring certainty to the businessman. India should take a risk here. Yes, the price of one commodity may go up, onion prices will be higher today but potato prices may be lower. One should look at the entire basket that the consumer is buying and trust our farmer. The farmer will produce more when prices improve.

AJ: *I trust my government to allow us to get better prices. (laughs)*

RR: Harish spoke about structural surplus. The question came up in the USA in the 1920s, when the farmer was called the poor man of the decade, just before the depression struck. The first

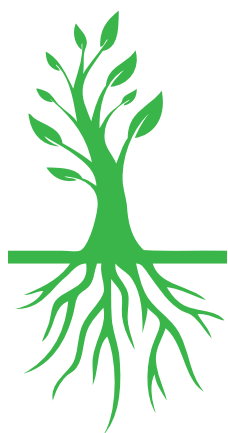


Photo: Pixabay

thing under the New Deal was that much of the structural surplus began to be procured and got to be invested in charity homes, orphanages, mid-day meals. In fact, mid-day meals were introduced in the USA in 1933. These are the uses that the surplus to put to. There is a lot to learn from those historical experiences.

In places where the PDS works well, at least about 20 per cent of the consumption of households is met through PDS purchases. That is what National Sample Survey (NSS) data will show you. However, nutrition is a bigger ball game. There are behavioural, cultural and dietary questions involved. There is often simplistic discussion on whether cropping pattern should meet the requirements of nutrition. It does not take the farmer's income into account. The farmer cannot simply grow crops that are necessary for

¹ Sir Chhotu Ram, was an eminent politician in British India's Punjab Province. He belonged to the Jat community and championed the interest of oppressed communities of the Indian subcontinent. He was knighted in 1937.





There is often simplistic discussion on whether cropping patterns should meet the requirements of nutrition. It does not take the farmer's income into account

the nutrition of the society. Farmer will grow for an income. It is the government's role to ensure that the crop or the food availability is structured in such a way, including through imports, that nutritional requirements are met.

Fortification is a very important advance that has been made but for some reason fortified foodgrain is not yet accepted for policy support. Golden rice holds a lot of promise but there are huge lobbies working against it. There is a completely irrational and unscientific idea like Zero Budget Natural Farming (ZBNF) getting enormous currency but there is a lot of evidence to show that fortified rice works; particularly golden rice works but it has not been approved. These are all things with nutritional implications. So I would see nutrition in a broader

canvas. However, yes, PDS plays a very central role in as an institution.

ASHOK (Audience): *My question is related to what you said about the investment in research. Has there been any research on how to convert stubble into organic fertilizer. I read an article, khet ka amrit, published in Allahabad that there is someone converting the stubble into organic fertilizer in two weeks. This will benefit farmers.*

AJ: There is ongoing research but no clear results. We conclude this session now on a note of some optimism. When I came from the farm, I was not that optimistic about the road ahead but after hearing both of you, I sense a level of optimism. ●

Of The Farm Sector- Policy-Maker Mindset Disconnect

T. K. Arun, Arvind Mayaram & Bharat Ramaswami

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T. K. ARUN: The subject, *the Indian Economy and the Kisaan* is appropriate because the farmer issues cannot really be discussed exclusively in the rural context. They should be seen as a part of the larger economy. India is so concerned about inflation that, given a chance, the central bank, industry or policy experts will send farm prices crashing to the bottom to make sure that inflation does not hurt the consumer and the rest of the economy can carry on, regardless of what happens to farmer incomes.

India is now at a stage where farm prices have to go up if farm distress and the rural distress are to disappear. This will certainly have an impact on inflation, on interest rates and, therefore, on the allocation of capital across the economy. The huge issue is how much income must the farmer community forgo for interest rates to be low. How does one balance such trade offs? If there is shortage of onions, the first response is to ban onion exports even though the farmer will probably get much better prices from onion exports. What role should trade play in modulating farm prices?

When the Indian economy started to liberalize, the attention was naturally on the industrial sectors. Many do not appreciate that it bestowed great benefits on the rural economy too. Earlier repressed farm prices and heavy protection given to the industry skewed terms of trade heavily against the farm sector. When import duties came down sharply and industry became less protected, more farm produce had to be sold to buy the same set of industrial goods that were purchased in the past. This changed the terms of trade for the farmer along with the farm sector's consuming and purchasing capacity.

When I started journalism in the early nineties, no significant advertiser went to the rural areas, especially to the regional language newspapers. The premium advertising went to English language newspapers. This changed dramatically because of the shift in the terms of trade and rural India began to prosper, the purchasing power there improved at a rate that persuaded industry to start advertising in regional language newspapers. This allowed the newspapers to grow, thrive and



T. K. ARUN
Editor, Opinion,
The Economic Times



ARVIND MAYARAM
Financial Advisor,
Government of
Rajasthan &
Former Union
Secretary



BHARAT RAMASWAMI
Head of the
Department
of Economics,
Ashoka University

flourish to an extent where some are today the largest newspapers in the world. All this happened on the strength of the farming economy.

Is Mahindra a part of the rural economy? It is a company that manufactures trucks and tractors among other things. A large part of the income is driven by the tractor business that depends on what farmers do and what the farming conditions are. Clearly then farmer prospects in this country depend on the overall prosperity of the economy just as overall economic policy determines how farmers are affected.

AJ: *How much of such thought goes into policy-making when the budget gets made, when allocations to various sectors are decided? How direct is the linkage between the farm sector and the Indian policy-makers' mindset?*

ARVIND MAYARAM: It is very much there. Whatever has been said is part of the thought process that goes on but the economy is considered from various perspectives. If one looks at consumption, one examines how consumption is maintained and where that consumption is coming from because consumption determines farmer earnings and greatly affects the purchasing power in the rural areas, in the hands of farmers. The question is how farmers are faring after

the reversal of the terms of trade in 1991. The most important development has taken place only after 2004 after the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) came into being because landless labour was not part of this story before 2004. Therefore, between 1991 and 2004, there were marginal changes, save for changes in minimum wages for rural skilled and semi-skilled labour.

India is at a stage where farm prices have to go up if farm and rural distress are to disappear. This will have an impact on inflation



In fact, in 2004, if I am not mistaken, the minimum wage in Uttar Pradesh was ₹35. A large number of landless farmers, employed in the construction or the farming industry, who had no bargaining power even after liberalization were incorporated under the MGNREGA, making for greater demand and farmers began to get better wages. That is when the role of consumption became apparent in the rural areas and some 150 million came out of poverty between 2005 and 2012. This was on account of the very large number of landless, unskilled and semi-skilled labourers who began to earn much better wages leading to higher consumption that drove growth, even after Lehman collapsed.

Such thinking goes into the process of economic policy-making, including budget-making in different ways. Macroeconomic parameters are considered in terms of other growth drivers but these are very much part of the consideration.

TKA: I am sure that MGNREGA pushed up rural wages. However, the total amount of work created by the rural employment guarantee scheme was about two per cent of the total work in the rural areas over the period. The construction boom recently played a role and that pushed up wages in general. There was a lot of migration from rural to urban centres. For the first time, in 2011-12, the share of the work force employed in agriculture dropped below 50 per cent. It came down to 49 per cent and it is much lower now.

The farmer finds labour cost going up if there is prosperity in non-farm sectors and a demand for labour, which is met by people going from villages from farming to construction and similar activities. At the same time if the output prices do not go up, farmers find themselves in a squeeze. This did not really happen between 2004 and 2014. There was general prosperity in the rural areas. How do you explain this?

AM: Commodity prices were rising too at that time. That was the period of good tidings at that front as well. There were several reasons for increase in rural prosperity, including MGNREGA and higher farm prices. There was a growth in farm value-added led by increase in farm prices and there was prosperity in the non-farm sectors. All of them played a big role but since then all have diminished in importance causing the acute distress today. The farm price story has gone into a cycle because farm prices cannot rise all the time.



Photo: Dinodia

The world economy adjusts to the overabundance of agricultural supplies and there is a period of farm prices fall.

What one should be able to count on is the structural story, which is the prosperity of the non-farm sector. Unfortunately, that story has now vanished. It has compounded the drop in prices in the farm sector. One is aware of the fact that with very small farms distress is never far away and what is important here is not just the rate of profitability but the aggregate income. The asset sizes are so small that even with high profitability it is very difficult to generate a viable income. That being the case, looking at farm prices alone is not a solution in the long run.

TKA: *What about things like leasing land to ensure economies of scale in farming. Since one does not want corporate farming, the only option is to allow leasing of land. Would farmers' co-operatives or a large farmer or some other entity that is able to lease these small pieces of land and cultivate them efficiently be a viable proposition?*

AM: If the small pieces are considered separately,





NREGA was about enhancing livelihood security of rural people. It was like an insurance; a social security. The idea was that wages outside would be higher

it sounds logical and can work well but matters are not that simple given that almost 85 per cent of farmers in India are small or marginal. When small farmers lease out the land, they might get some money from the lease but that is not very much because of factor price of land in production is not going to be as great. The question is when these people are released from the land, where do they go. Some may get absorbed in the larger farms but not all because larger farms will mechanize. Unless there are other aspects of the economy firing on all cylinders and creating a lot of jobs in the non-farm sectors, like construction and such other activities, the pressure of people released from land will be great.

A farm under two hectares cannot sustain family of four or five. While the NREGA did the initial job, people realized that it did not create enough

productive asset; it created less than two per cent of such assets given the money spent on engaging the people. However, the law itself was never an employment programme but about enhancing livelihood security of people living in the rural areas. It was like an insurance; a social security. The idea was that wages outside would be higher and, therefore, the demand for NREGA would fall. In fact, in 2011, from ₹42,000 crores, the actual expenditure on NREGA had come down to ₹29,000 crores. So the demand for work under NREGA was decreasing continuously on account of the jobs outside.

When looking at larger holdings and, therefore, mechanized farming one will have to consider other problems of very large numbers of people being released from the land and being gainfully employed.



Photo: Dinodia

PROF. BHARAT RAMASWAMI: When thinking of agriculture and farmers there is a tendency to focus too much on agriculture. The fact is that a farmer also belongs to a household that needs rural infrastructure, health or education. Much of the farm distress, when prices collapse, is caused by the cost of sending children to private schools because the government schools do not function very well. They even consider withdrawing children from school and parental anguish is enormous. While talking of the wider economy, one should connect all the rural households to quality healthcare and education. As the background note to these discussion points out, the farmers cannot live in isolation.

This is a very important given the huge deficiencies in health care and education that decline drastically as one moves away from the major metros and become a major determinant of the quality of life. This has nothing to do with agriculture but it is important for a quality of life. It is important to raise these issues and to think about not just prices and yields but also about the larger perspective focusing on the quality of life in rural India.

TKA: In 2005, an NSSO survey on farm conditions reported that 40 per cent of the respondents said that they would much rather not be in the farming sector. This is very much a part of the larger reality when one compares the share of the population or the workforce employed in agriculture in a developed country to what obtains in India today. In the USA, hardly two per cent of the population is engaged in agriculture. In Europe it is between three and five per cent. In India it is 49 per cent. It is an inevitable part of economic development and prosperity that more and more people shift out of agriculture to industry and organized services. This happens not only in farms but also in towns. This is what drives urbanization. So people will move away from farm sector into other occupations and physically from rural areas into towns.

This reality means that fewer farmers will have to produce more to feed the same population and more and more land will have to be released from farming to create new towns. This is not such a large amount of land in absolute terms but has potential for creating social conflict. One has experienced

Land taken for urbanization without farmers being given the feeling that they are the part of the prosperity, causes conflict

this in Singur, in Noida and around the country. Wherever land is taken for urbanization without the farmers being given the feeling that they are the part of the prosperity that will visit the place, there is tension and conflict. There is need to find a way to manage such natural progressive release in people from farming and raising land from farming. The question is how?

AM: Structurally the most dysfunctional thing to have happened in Indian governance is this dichotomy between rural and urban development. The creation of a ministry of rural development has actually stymied the urbanization of rural areas that ought to have happened. This does not mean migration into large cities and acquisition of large lands but every village needs urban amenities in terms of sanitation, good schools, drinking water and so on. These should have happened organically and land would have been released by people themselves for themselves. That there would be new cities is not being denied but the kind of migration, 20-25 per cent decadal migration from rural to urban areas would not have happened; not at that pace.

Rural development has come to mean giving farmers some buffaloes, cows and things like that. Urban development means building flyovers, metros and such things. People cannot be kept away from the good life they seen in urban centres and many are not keen to stay on in the farms not because they do not like farming or agriculture but because that is not the kind of life that they aspire for themselves and their families. The need is first to ameliorate this distinction between urban and rural areas with a conscious effort to urbanize rural areas. The pace has to be forced. That is one way of doing it.

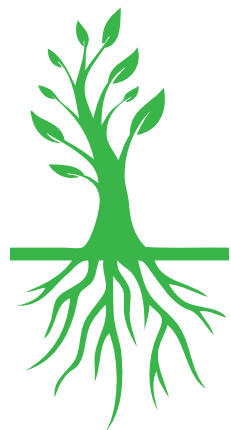
The second part is important, as tried out in Gujarat with farmers forming land holding companies and entering into agreements with developers. This has not happened so much in other states. The development price is also determined and the profit is shared pro rata. It is like shares



in a holding company. More such experiments are needed because land is the only capital the farmers have. Once the land is taken away they have no capital. They cannot even seek a loan because they have nothing to mortgage. There is need to look at different models.

BR: At the root of the problems are Indian regulations that restrict farmers from selling land and getting a true value for it. Somebody gets inside information or a lobby gets land use or the zoning changed and the intermediary makes a lot of money whereas the farmers do not. There is need to rethink old policies of how agricultural lands are zoned and classified. That is creating an artificial shortage of land, keeping land prices up and delivering high profits to intermediaries and speculators while farmers are left out.

Thanks to technology and education however, there is huge awareness in the rural areas. When I go for surveys, farmers typically ask me where I am from and the youngsters in the household look at my visiting card and Google me immediately and find out all about me. However, they find



their opportunities of mobility blocked at various levels. Aggregate studies confirm that roads and infrastructure help but rural India also deserves as good a quality of life as does urban India. There is talk about it but nothing is done. That is the big urban rural gap that has to be bridged. The question is how.

India's urban institutions are not in great shape either. However, the challenge is to get the non-farming economy moving again. There is an enormous debate on what has led to the slowdown but the main question is the policy credibility of the government. This government has a lot of time and can do a lot of work to restore credibility so that the investors are assured and India can get growth going in the non-farm sector.

TKA: India being very large and diverse, there are all kind of experiments going on. Magarpatta near Pune, where a clutch of farmers make an agricultural community, had one man named Satish who realized that his people were selling their land for cheap to people coming to build hospitals, education institutions and residential colonies and ending up as gardeners on the land that they once owned while the women worked as house maids. He decided to put an end to this and started a joint-stock company, pooling the land and built a township. Every farmer from Magarpatta is a crorepati and they have now started a Magarpatta II, which is thriving too. They have management institutions, hospitals everything. This is one way of extreme entrepreneurship on the part of the farming community that has empowered them to become not victims but the drivers of urbanization and responsibly so.

In other experiments as in Amravati in Andhra Pradesh, farmers have pooled their land for a new capital of Andhra Pradesh to be built. In return they will get 13 per cent of the land back as urban developed land. They feel that this is more than enough by way of compensation for having given their land to the government or to the developers without taking money upfront. This is a model of shared stakeholding for city developers and the farmers on whose land the city is coming up. The conventional system has created an artificial shortage of urban land, which is killing not only residential housing but hospitals, schools and anything that requires land.

Around 60 per cent of capital cost of setting up a hospital is land. This makes a school or hospital





Photo: Dinodia

Large parts of India face labour shortage, met by migrants from Bihar, Odisha, Bengal and Bangladesh. This should be factored in

very expensive for ordinary people to afford. It will need conversion of agricultural land into urban land and this needs some understanding. There is no conflict between multi-crop land and prosperous agricultural land being converted into cities but there is need to ensure that there is a policy framework in which the farmers also gain from this prosperity. This is what needs great attention.

BR: Absolutely! Apart from terms for just better prices for the land, one can also think of other models. I hear that IIT Delhi was built on land taken from villages in the area. On a survey there, I had villagers point out the irony of being right next to one of the best institutions in the world but not one child from the village getting an education there. Fortunes can get frittered away but, with such institutions in place, if one invests in human capital it would stay forever. Thus stakeholder sharing can look at more imaginative models.

TKA: China is now 54 per cent urban, most industrial countries are between 80 per cent and 90 per cent urban in terms of population. India is around 35-36 per cent urban; the last census showed 32 per cent. People are shifting out of villages to towns and this will reduce the share of people available for working on the land. Growing up as a child in Kerala, I saw major strikes when tractors were introduced to till the land because they were taking over the labourers' work. Couple of years ago there was another strike because the government was not providing tractors fast enough because there is no labour available.

India will face a labour shortage that exists in a large part of the country and which is met by migrating labour from Bihar, Odisha, Bangladesh, Bengal and such places. This is something that should be factored into India's overall policy framework. The other part, of course, is about the role of trade in agriculture. Should trade be limited to India's internal trade or should Indian agriculture be seen



India probably has the most diverse agro climatic conditions in the world, which should be utilized. It needs to get integrated to global markets with commodities futures

as playing a positive, enriching role for the farmers by being integrated into the global economy.

Africa's population will grow the fastest in the next 20-30 years and as that happens there will be the same need for producing food that India faces today. Some food Africa will obviously grow but there is a potential for Indian farmers to take part in supplying food to the continent. India probably has the most diverse agro climatic conditions in the world, which should be utilized. If India wants to feed the world, it needs to get integrated to these global markets and this cannot be done without a thriving commodity futures, complete with the ability to take risks in this market by having a full array of options in the future. India, currently, goes by the gut reaction against future markets in commodities. How sensible is this?

As far as futures markets are concerned, Indian growth has to be organic. Nowhere in the world are

farmers direct participants in the futures markets. The major benefits of futures markets for farmers accrue from their discovery. It is still at a premature state in India because the government intervenes so heavily in trade. The instinctive reaction is to ban trade when prices go up so that urban consumers are spared high prices even for a short period of month or so before the new crop comes in. Under such conditions, there can be no successful futures contract trading, in onions for instance. Certain preconditions are needed for futures to succeed.

Trade in agriculture is a great way to make agriculture an engine of growth. It may not be the only way but it is one way but that needs a fair amount of institutional innovation because exports typically require some larger entities that can appraise markets, make contracts on the downstream and upstream market. All that is available right now. As earlier discussed, policies



Photo: Pixabay

like the Essential Commodities Act disincentivize large entities from investing in agriculture. For example, some successful seed companies work with very poor farmers and aggregate sale margins are very modest. Any of the bigger companies can buy them out but they do not enter that sector because it is not easy to work in those sectors. There are far too many government regulations, the margins are low and they do not enter it.

Similarly, on the marketing side, these companies do not wish to get caught up in regulations that vary from state to state because there is no unified market as such. For agriculture exports India had success in selected commodities where one would concentrate on a particular region and export a produce but there is no overall strategy in place.

In terms of food consumption by Indians, the top income deciles consumed five times more milk per capita than the bottom income deciles did. There is a huge scope to increase consumption at the bottom end and that alone can stimulate consumption, which in turn will increase the demand for agriculture and set into motion a virtual cycle of growth. There are ways of doing that as well.

AM: I differ slightly from what you have said about commodities futures. In fact, as finance secretary, I opposed the merger of commodities market with the Securities & Exchange Board of India (Sebi) because there is need for a separate commodities market for it to mature. Now it has become subservient to the money equities market. One hardly hears about a commodities market at all. A strong commodities market is needed for three reasons.

1. Price discovery is very important but trade also needs three to five time horizons in terms of supply chains that it creates. So if one is unable to buy in the future, one can never have trade. One cannot engage in export trade on a year-to-year basis but must be able to contract for the next five years. That is possible only in the futures market where one can lock in the price and work out the economics in terms of how much one can use for production or for pricing. Commodities market is very important and must be developed robustly going forward and for more and more commodities.
2. This opens up the other part, which is the two-way trade. If onions are exported from India and the prices go up, there will be incentive for traders to import it from outside to make a profit here. This will also equalize the prices.
3. It will also have an impact on inflation management in the agriculture space. Instead of suppressing the prices at the farm and thereby impoverishing the farmer, a two-way trade can be enabled that will allow the farmer to continue to get a good price but at the same time the market is not allowed to get overheated. Commodities are thus very critical and need to be looked at.

The problem with commodities futures is two fold. One is that India lacks the robust infrastructure in place in terms of storage, grading, sorting and transportation from the farm gate to the market. That is still very shaky and very asymmetrical. In some areas it is very good but very poor in others. This needs to be looked at very carefully and in a very focused manner. The other thing that is important in commodities futures is that India needs to look at the financial structure, which allows financing that includes credit to the farm sector and the manner in which bank credit is structured. This is not about how it is given but how it is structured; how the monthly repayments and the interest rates are worked out.





Photo: Dinodia

The small farmers do not have holdings or working capital to be able to hold the produce till they get a fair price in the market and then repay. They find it extremely difficult to work with banks given the manner in which the loans are structured but self-help groups have done very well. The self-help group takes the loan and disburses it to its members and reworks the loan if necessary. In Andhra Pradesh some self-help groups get three-year loans from the bank and give one-year loans to their own people. Because the loans are small, the SHG can rotate the same loan, making the cost of loan cheaper and they manage this very well. When it is a one-to-one relationship with the bank, whether for a crop loan or otherwise, the

India must review how credit to the farm sector is structured; not only at how it is given; also the repayments and interest rates

payment has to be on a monthly basis. That is how loans are structured.

Unless the entire financing for the agriculture sector is looked at in a very innovative and different manner, India will not be able to provide financing and farmers will continue to be in distress because they have no working capital to be able to sustain themselves through the crop cycles.

BR: I agree with you. It is very important for exporters to be able to enter into contracts and given that India produces so much of some commodities, there is a huge scope for expanding futures markets in India and one can obviate the need for depending on other countries for hedging requirements. The only problem is that the government has to agree to restrain itself and not suspend wheat futures overnight or limit contracts. The growth also has to be organic, which is not happening now. On the physical side, it has to be accompanied by warehouses, storage and such others and government policies are very critical for all of this. There is also the issue of supply chain financing, which is very big and works very well with collateral-based lending. The commodity is already there. Unfortunately, studies show that even supply chain financing is biased against small farmers though there is no reason for that. There is a huge scope for allowing access to markets for small farmers.

TKA: The linkage continues between the larger economy and the farm sector and the many perishable-produce based stores, up to temperature control. This means electric power and 50 per cent of the power produced is not paid for. Around 10-12 per cent of the power is lost on account of technical reasons and the rest is stolen. India has created a political economy where it is considered the duty and not just the right for the politician to patronize theft of power. So people are allowed to steal power and the power industry cannot be financially viable. It is either subsidized by the

government or this will just go on. How can there be viable supply of power to rural areas to build climate control storage in this kind of situation? The failure to create a functional power sector is ruining India's ability to create storage systems for its produce.

AUDIENCE: *What do you think about profitability and technology? Can Artificial Intelligence (AI) protect price, productivity? Do you think this can transform the Indian agricultural sector in the next 10 years?*

AM: Technology is a function of large farming. Farm produce organizations can have a joint land holding or a corporate land holding to induct various technologies. There are places where this has happened. Drip agriculture is now being driven in horticulture in some rudimentary manner and is moving forward. In terms of how AI can predict pricing, once there is a robust commodities futures market that is bound to happen. It is mind-boggling in the stock markets and human mind cannot even deal with it but it is happening. These things happen when one moves from physical farming to financialization of agriculture.

TKA: AI cannot directly play a role in farming. Using drones for remote sensing of the quality of the soil and what it requires and that data can be processed using artificial intelligence. I read about a French vineyard that employs drones to do practically everything required to tend to that crop. You can monitor the growth of the vines, any crop disease, moisture in the ground and can activate mechanisms to manage them using AI. In India the need for AI for such things is limited but it can be used in insurance and other such sectors.

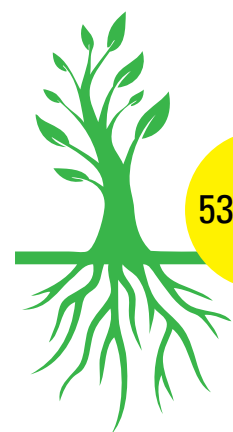
AUDIENCE: *What about the implications of climate change for farmers? How can the private sector or government help to protect the farmer and minimize the risk or derisk farming and continue to incentivize farmers?*

AM: In the last session there was a discussion on the investment in agricultural research. There is need to move towards crops that are more climate resilient. Also, water is a very critical aspect because it is going to be more and more scarce. How can water be reused? There is great need for investment and research.

AUDIENCE: *Is it the time for the farmers to formulate strategies for their own sustenance? Research organizations, government bodies and others have failed. Farmers are moving towards a collaborative common economic system. Is it the right time to go for self-sustenance?*

BR: As the background note to this dialogue emphasizes, farmers have not shaped agricultural policies in India. Farmers have the power to resist policy but not to shape it. I had analyzed several agricultural subjects and their analyses in agriculture newspapers versus English language newspapers. Policy issues are debated only in English language newspapers. Agriculture newspapers only talk only about availability of seeds, prices of output and other practical details. They do not talk about policy issues.

TKA: In India there is little realization that some of the largest agriculture players in the world are farmer co-operatives. Fonterra, the world's largest milk producer, is a co-operative. Amul is a co-operative. Indian farmers have to interact productively with large retailers that are becoming players in the agricultural sector. They need the organized strength of the co-operative in order to withstand the bargaining pressure that these retailers are building. ●



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Rethinking the Farm Sector

Rathin Roy & Aunindyo Chakravarty

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For the past two years I have been trying to determine the unsubsidized price of a square meal. I have been trying to determine it in different zones of India. I just cannot flush the subsidies out no matter how much I try. I need the benchmark; I need to know that a square meal, which is a certain amount of cereal, combined with some protein and something else, can be had for so many rupees per household per day or per month.

I am not able to calculate this. There are so many subsidies and interventions taking place for so many different stakeholders, except for the farmer. The objective was to grow more food, so the farmer was given fertilizers. The objective was to make sure that the food prices were kept low so people could afford it and not go hungry. So the farmer was given an MSP. Otherwise why is the government, at the high level, getting involved in importing commodities when there is a food shortage? One needs to find answers.

There is something else, which will be very unpopular with farmers. I have not seen a farmer leader in this country since 1992! Is there anyone? There is no minister that I can think of or anyone in the opposition, who says 'I am here to speak for the farmer. You are not alone'. Similarly, as a resident of Mumbai, a metropolitan city, I see no political leader in this country who says I am here with the clout of being a representative of a metropolitan city. In a manner of speaking, we are in the same boat. One is either representing communities, such as the Jats, or lobbies, such liquor contractors across the board. This is a social failure.

When talking about farmers, I wish to know where the collective organization of the farmers is? Gone are the days when farmers could come to India Gate and shut down the government as farmers. The late Chaudhary Charan Singh, was a farmer leader but never attended a Jat community meeting. Never, ever! Today, there is no question of farm organizations and, therefore, the farmer's voice is gone. A political leader will speak for the farmers if it is expedient to do so. Somebody else



RATHIN ROY
Director, National
Institute of Public
Finance and Policy,
Ministry of Finance



**AUNINDYO
CHAKRAVARTY**
Former Managing
Editor, NDTV



Photo: Pixabay

I have not seen a farmer leader in India since 1992! There is no minister that I can think of or anyone in the opposition, who says 'I am here to speak for the farmer'

may speak in the parliament but there is no farmer representative; not even Sharad Pawar, who speaks for the farmer consistently on an all-India basis.

That is the failure; the failure of voice, which is translating into policy dysfunction. That is why I was very pleased with the Prime Minister independently said, 'Ok let us cut through all this, let have doubling of farmer incomes'. However, there is no coming together from the farmers' community to discuss this. That is something that one should think about.

POOJA MEHRA: Aunindyo, the economy is not doing that well and India cannot be a \$5 trillion economy by 2024. Basic calculations show that India needs to grow in the remaining years at the rate of 15 per cent every year, which is clearly



impossible unless there is some very valuable discovery; India discovers reserves of gold or diamond and can monetize it. Yet the stock market keeps rising. What are they betting on? Much of the country, Mumbai, for instance, has no idea about what is being discussed in this conference, the problems facing a large number of people in this country, the state of the economy.

AUNINDYO CHAKRAVARTY: Mumbai has a very good idea about what is going on and the reason why markets go up is because there is no where else to put the money. All capital has been financialized over the last 20-30 years. Most of the money lies in financial form. CMI data on investments by corporates in India clearly shows that the amount in financial instruments has gone up. When one cannot invest in machines, when there is no demand in the market, why would one start an enterprise? Where does one put in money if one wants to? The banks give a very low rate of interest.

I remember when my parents were trying to save for their old age they were getting 12-13 per cent interest on their fixed deposits. Today, it has come down to six per cent. So what does one do? One needs to beat inflation and the only place one can invest in is the markets. This is why a lot of people do systematic investment plan (SIPs). There is a lot of retail money going into the stock markets right now through the mutual funds space. They know there is nowhere else to invest and that is why Mumbai is investing in the stock markets. That is the simple answer.

Taking up what Rathin said, about there being no farmer leader in India anymore; the last one was probably Mahender Singh Tikait. Tikait himself had a very strong Haryana, western Uttar Pradesh belt support. There was also Sharad Joshi but no one in the past 20 years.

That is also because of the way in which the economy has developed; not just that the people who have decided that there will be no farm leader. When one considers the question: why is there a Jat group or a Yadav group or why there is a break within the OBCs and within the dalits, one is to a certain extent looking at an agricultural question; the farmers question.

There is, again, a random figure and frankly I do not understand why is it two hectares of owned land that should determine if the farmer is small and marginal farmer? From one state to the other, do the two hectares mean the same? From one crop

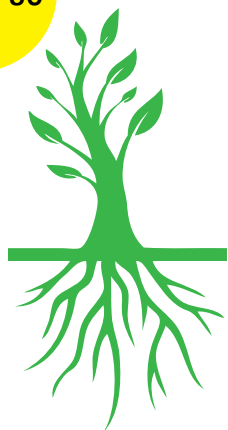


Photo: Pixabay

to other do the two hectares mean the same? Again, when MSP is raised and farmers associations ask for higher MSP, I find justification there but a large number of poor farmers – who would in my parents' days be referred to as the peasantry, with distinctions between the peasantry, the middle peasant, the rich peasant – would at the end of the agriculture season have to go and buy food.

They are net buyers. So when MSP goes up and it is not accompanied with cheaper food distribution, small farmers actually lose out because they buy more produce than they sell. It is as simple as that. The middle-income and rich farmers gain more from MSP. The farmer gains when the crop is sold but a poor farmer's produce is often hypothecated to a mahajan.

Having said that, the farming community is a complex thing with various communities with their interests at work. One has to understand that the community system works in a particular manner. Even castes are simultaneously communities. So looking at farming from outside





There are no farmer leaders in India; the last one was probably Mahender Singh Tikait. There was also Sharad Joshi but no one in the past 20 years

as a cut and dried system of this much land holding, this much income is something that needs to be reset, building in an understanding of how communities work.

One of my former colleagues and his family are wholesale traders of dal in Madhya Pradesh. When demonetization happened they gave things for free to poor farmers and did not expect anything back because there were long-term issues at work. When one considers capitalist relationships, one assumes that there is capitalism happening in the rural economy, which is not correct. One must also understand that many people in rural and urban India are not recognized by the state and when the state implements its laws, they will be thrown out of the system.

T K Arun said in the previous session that there

are politicians who seem to believe that they will have to bend the rules and patronize theft of power. The political scientist, Partha Chatterjee, talks of the political society where there are a large number of people who can only survive by the bending of rules. The rule has to be bent for them to survive and that is a crucial part of understanding of the Indian economy.

I remember going to Baghpat during the 1999 elections and I asked someone whom he would vote for and he said that he would vote for Charan Singh, who had passed away several years ago. I came with pre-conceived notions and I got two or three sound bytes and my story was ready. Notions around farming have to change and farmers and the farm sector have to be rethought in terms of the Indian economy. ●

ECOLOGY

CLIMATE CHANGE

Extreme Weather Events and the Farmer

Shambhu Ghatak

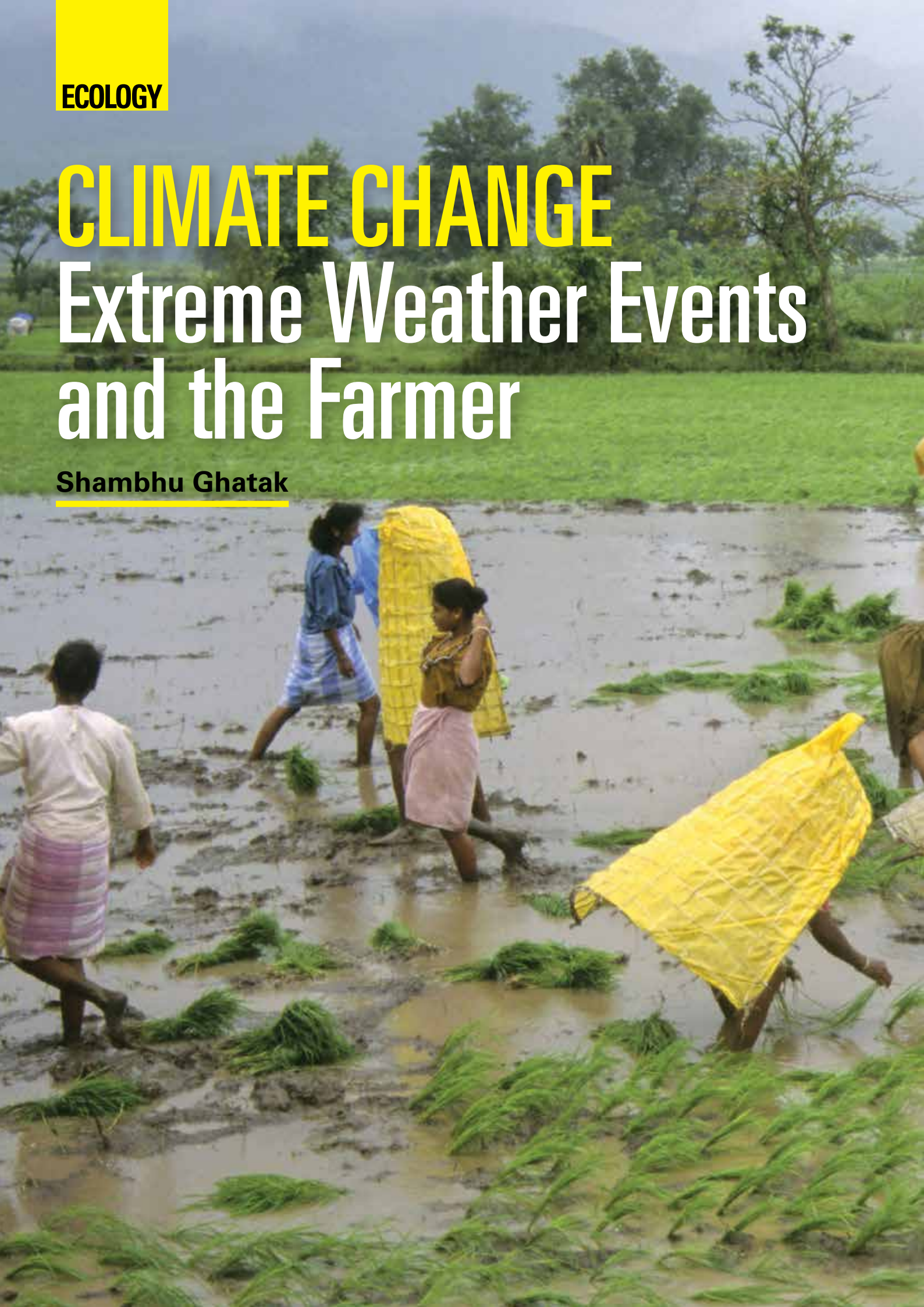




Photo: Dinodia

We live amidst climate uncertainties. Sporadic natural events like floods and droughts have made headlines in recent times. An official report released in April 2019 shows, among other things, that extreme weather events have taken a huge toll on both human and cattle lives, personal property and crops grown by farmers and farm workers.



SHAMBHU GHATAK

Senior Associate Fellow
Inclusive Media for Change Project

Even official reports and documents acknowledge this. The Economic Survey 2017-18¹ brought out by the Ministry of Finance had a chapter on climate change and its impact on agriculture. It acknowledged that:

1. Extreme temperature shocks reduce farmer incomes by 4.3 per cent and 4.1 per cent during *kharif* and *rabi*, respectively.
2. Extreme rainfall shocks reduce incomes by 13.7 per cent and 5.5 per cent during *kharif* and *rabi*, respectively.
3. Extreme temperature shocks, when a district is significantly hotter than usual (*in the top 20 percentiles of the district-specific temperature distribution*), result in a 4.0 per cent decline in agricultural yields during the *kharif* season and a 4.7 per cent decline in *rabi* yields.
4. Under extreme rainfall shocks, when it rains significantly less than usual (*bottom 20 percentiles of the district-specific rainfall distribution*), there is a 12.8 per cent decline in *kharif* yields.
5. The decline is smaller but not insignificant at 6.7 per cent in *rabi* yields.

A chapter on extreme weather events and natural disasters in the report titled *EnviStats India 2019, Vol. 1: Environment Statistics* reveals that on an average more than 2,100 Indians died every year because of extreme natural events between 2001-02 and 2018-19. Almost 14.8 lakh cattle lives were lost and roughly 23 million houses or huts were damaged owing to extreme natural events in the last 18 years. On an average, nearly 37 lakh hectare of cropped area got affected each year by such events during that span. (*Table 1 for details.*)

Consider the damage done by extreme natural events in the last six years. *Table 1* indicates that

¹ (mofapp.nic.in:8080/economicsurvey/pdf/082-101_Chapter_06_ENGLISH_Vol_01_2017-18.pdf)





Photo: Dinodia

Table 1: Year-wise damage due to extreme natural events in India

	Number of human lives lost	Number of cattle lives lost	Number of houses damaged	Cropped area affected (in lakh hectares)
2001-02	834	21269	346878	18.72
2002-03	898	3729	462700	21.00
2003-04	1992	25393	682209	31.98
2004-05	1995	12389	1603300	32.53
2005-06	2698	110997	2120012	35.52
2006-07	2402	455619	1934680	70.87
2007-08	3764	119218	3527041	85.13
2008-09	3405	53833	1646905	35.56
2009-10	1677	128452	1359726	47.13
2010-11	2310	48778	1338619	46.25
2011-12	1600	9126	876168	18.87
2012-13	946	24293	667319	14.44
2013-14****	5677	102998	1210227	63.74
2014-15	1674	92180	725390	26.85
2015-16	1460	59057	1313371	31.09
2016-17***	1487	41965	546518	25.48
2017-18**	2057	46488	915878	47.44
2018-19*	2400	123000	1557000	17.00
Total between 2001-02 to 2018-19	39276.0	1478784.0	22833941.0	669.6
Average (per year)	2182.0	82154.7	1268552.3	37.2

Source: * Annual Report 2018-19, Ministry of Home Affairs. https://mha.gov.in/sites/default/files/AnnualReport_English_01102019.pdf

** Annual Report 2017-18, Ministry of Home Affairs. <https://mha.gov.in/sites/default/files/MINISTRY%20OF%20HOME%20AFFAIR%20AR%202017-18%20FOR%20WEB.pdf>

*** Annual Report 2016-17, Ministry of Home Affairs. https://mha.gov.in/sites/default/files/annual_report_18082017.pdf

**** Annual Report 2013-14, Ministry of Home Affairs. <https://mha.gov.in/sites/default/files/AR%28E%291314.pdf>

Chapter: Extreme Events and Disasters, EnviStats India 2019, Vol. I: Environment Statistics, Ministry of Statistics and Programme Implementation, released in April, 2019. www.mospi.gov.in/sites/default/files/reports_and_publication/statistical_publication/EnviStats/Component%204.pdf

the lives lost due to extreme natural events were 5,677 in 2013-14, 1,674 in 2014-15, 1,460 in 2015-16, 1,487 in 2016-17, 2,057 in 2017-18 and 2,400 in 2018-19. Cattle deaths due to extreme natural events were 1.03 lakhs in 2013-14, 92,180 in 2014-15, 59,057 in 2015-16, 41,965 in 2016-17, 46,488 in 2017-18 and 1.23 lakhs in 2018-19. Houses damaged due to extreme natural events were 12.10 lakhs in 2013-14, 7.25 lakhs in 2014-15, 13.13 lakhs in 2015-16, 5.47 lakhs in 2016-17, 9.16 lakhs in 2017-18 and 15.57 lakhs in 2018-19. The total cropped area affected by extreme natural events was 63.74 lakh hectares in 2013-14, 26.85 lakh hectares in 2014-15, 31.09 lakh hectares in 2015-16, 25.48 lakh hectares in 2016-17, 47.44 lakh hectares in 2017-18 and 17.0 lakh hectares in 2018-19.

At a time when the harm caused to the farm sector by extreme natural events is reaching newer heights, many private sector players, having earned huge profits for some years, are getting out of the crop insurance business, according to a news report published by Livemint (November 19, 2019, <https://bit.ly/2PpiUkP>).

The main reasons for abandoning the crop insurance business are high costs of reinsurance owing to increased frequency of extreme weather events, a rise in claims by farmers who have taken crop insurance and alleged political interference in estimating crop losses. As opposed to the situation earlier, it is the public sector insurers who now have a major stake in the crop insurance market.

Table 2 on deaths due to extreme natural events shows 25,066 deaths in 2010, 23,690 in 2011, 22,960 in 2012, 22,759 in 2013, 20,201 in 2014 and 10,510 in 2015. Lightning was responsible for almost a quarter (2,641 deaths) of the deaths caused by extreme natural events in 2015, whereas 29.6 per cent of such deaths were caused by 'other natural causes' in the same year. Floods, exposure to cold and heat stroke caused 8.0 per cent, 10.9 per cent and 18.2 per cent of all deaths that occurred due to extreme natural events in the year 2015.

The Accidental Deaths and Suicides in India 2016 report of the National Crime Records Bureau (NCRB)² finds that the total number of deaths due to extreme natural events was 8,684 in 2016 (figures not mentioned in Table 2). Lightning was responsible for 38.2 per cent (3,315 deaths) of all deaths caused by extreme natural events in 2016,

² (ADSI 2016, <http://ncrb.gov.in/StatPublications/ADSI/ADSI2016/chapter-1%20accidents.pdf>)



Table 2: Number of deaths by type of extreme natural event

Sl.No क्रम संख्या	Causes	2010		2011		2012		2013		2014		2015		कारण
		Number of Deaths	% to total deaths	Number of Deaths	% to total deaths	Number of Deaths	% to total deaths	Number of Deaths	% to total deaths	Number of Deaths	% to total deaths	Number of Deaths	% to total deaths	
		मौतों की संख्या	कुल मौतों का प्रतिशत	मौतों की संख्या	कुल मौतों का प्रतिशत	मौतों की संख्या	कुल मौतों का प्रतिशत	मौतों की संख्या	कुल मौतों का प्रतिशत	मौतों की संख्या	कुल मौतों का प्रतिशत	मौतों की संख्या	कुल मौतों का प्रतिशत	
1	Avalanche	45	0.18	60	0.25	40	0.17	52	0.2	23	0.1	38	0.4	हिमस्खलन
2	Cyclone/tornado/Tsunami	106	0.42	117	0.49	47	0.20	52	0.2	104	0.5	28	0.3	चक्रवात/टॉरनाडो/सुनामी
3	Earthquake	8	0.03	69	0.29	3	0.01	9	0.0	2	0.0	92	0.9	भूकंप
4	Epidemic	57	0.23	127	0.54	80	0.35	57	0.3	48	0.2	218	2.1	महामारी
5	Exposure to Cold	937	3.74	849	3.58	997	4.34	946	4.2	913	4.5	1149	10.9	शीत लगना
6	Flood	965	3.85	585	2.47	420	1.83	700	3.1	541	2.7	846	8.0	बाढ़
7	Forest Fire	0	0.00	0	0.00	0	0.00	0	0.0	11	0.1	19	0.2	वनाग्नि
8	Heat Stroke	1274	5.08	793	3.35	1247	5.43	1216	5.3	1248	6.2	1908	18.2	लू
9	Landslide	347	1.38	302	1.27	282	1.23	264	1.2	499	2.5	232	2.2	भूस्खलन
10	Lightening	2622	10.46	2550	10.76	2263	9.86	2833	12.4	2582	12.8	2641	25.1	बिजली गिरना
11	Starvation/Thirst	210	0.84	136	0.57	217	0.95	109	0.5	50	0.2	30	0.3	भुखमरी/प्यास
12	Torrential Rains	123	0.49	170	0.72	203	0.88	142	0.6	156	0.8	195	1.9	मूसलाधार वर्षा
13	Other Natural Causes	18372	73.29	17932	75.69	17161	74.74	16379	72.0	14024	69.4	3114	29.6	अन्य प्राकृतिक कारण
	Total	25066	100.0	23690	100.0	22960	100.0	22759	100.0	20201	100.0	10510	100.0	कुल

Source: Chapter: Extreme Events and Disasters, EnviStats India 2019, Vol. I: Environment Statistics, Ministry of Statistics and Programme Implementation, released in April, 2019.

www.mospi.gov.in/sites/default/files/reports_and_publication/statistical_publication/EnviStats/Component%204.pdf

Note: Data in the report, EnviStats India 2019, Vol. I: Environment Statistics has been sourced from Accidental Deaths and Suicides in India reports (various years) of National Crime Records Bureau

Chart 1: Number of heat and cold waves in India



Source: Chapter: Extreme Events and Disasters, EnviStats India 2019, Vol. I: Environment Statistics, Ministry of Statistics and Programme Implementation, released in April, 2019.

www.mospi.gov.in/sites/default/files/reports_and_publication/statistical_publication/EnviStats/Component%204.pdf

Note: Data in the report, EnviStats India 2019, Vol. I: Environment Statistics has been sourced from India Meteorological Department, Ministry of Earth Sciences



Photo: Dinodia



Floods, exposure to cold and heat and sun stroke caused 8.9 per cent, 7.9 per cent and 15.4 per cent of the deaths caused by extreme natural events in the year 2016

whereas 24.3 per cent of such deaths were caused by ‘other natural causes’ in that year. Floods, exposure to cold and heat and sun stroke caused 8.9 per cent, 7.9 per cent and 15.4 per cent of the deaths caused by extreme natural events in the year 2016.

Heat and cold waves are another grave danger. *Chart 1* shows that heat waves in the country increased from 44 during 1970-79 to 226 during 2000-09. Similarly, cold waves went up from 62 during 1970-79 to 153 during 2000-09. Between 2010 and 2018, the highest number of heat waves were observed in 2017 (524). The highest number of cold waves occurred in 2017 (276) too.

The highest number of deaths due to heat wave between 2000 and 2018 was detected in 2015 (2,081), followed by 1,539 deaths in 2003 and 1,433 deaths in 2013. In the 2000-2018 period, 2003 saw the highest number of deaths due to cold wave (1,156), followed by 722 deaths in 2011 and 490 deaths in 2001 (*Table 3*).

Chart 2 shows that between 2005 and 2017, the highest number of districts affected by drought was in 2009 (338 droughts), followed by 270 droughts in 2015 and 122 droughts in 2012.

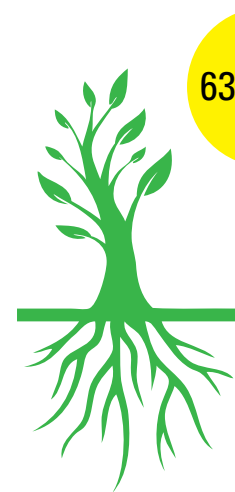
In a reply to unstarred question number 4,428 (January 8, 2019 in the Lok Sabha), the Minister of State, Agriculture and Farmers’ Welfare, Gajendra Singh Shekhawat said that around 252 districts faced deficient rainfall during the south west monsoons between June 1, 2018 and September 30, 2018. The rainfall deficit prompted the state governments of Maharashtra (26 districts), Karnataka (24 districts), Andhra Pradesh (9 districts), Jharkhand (18 districts), Gujarat (11 districts), Rajasthan (9 districts) and Odisha (9 districts) to declare drought during *kharif*, 2018.

Table 3: Deaths due to heat waves and cold waves in India

Year वर्ष	Heat Wave ऊष्णता लहर	Cold Wave शीत लहर
1970-74	2029	785
1975-79	459	235
1980-84	450	1083
1985-89	1055	1105
1990-94	632	522
1995-99	2284	585
2000	55	368
2001	56	490
2002	807	107
2003	1539	1156
2004	117	462
2005	585	90
2006	135	58
2007	419	63
2008	111	114
2009	216	79
2010	242	450
2011	12	722
2012	729	139
2013	1433	271
2014	547	58
2015	2081	18
2016	137	42
2017	375	51
2018	16	136

Source: Chapter: Extreme Events and Disasters, EnviStats India 2019, Vol. I: Environment Statistics, Ministry of Statistics and Programme Implementation, released in April, 2019.

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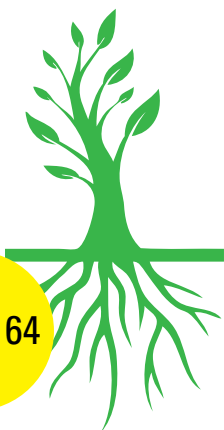
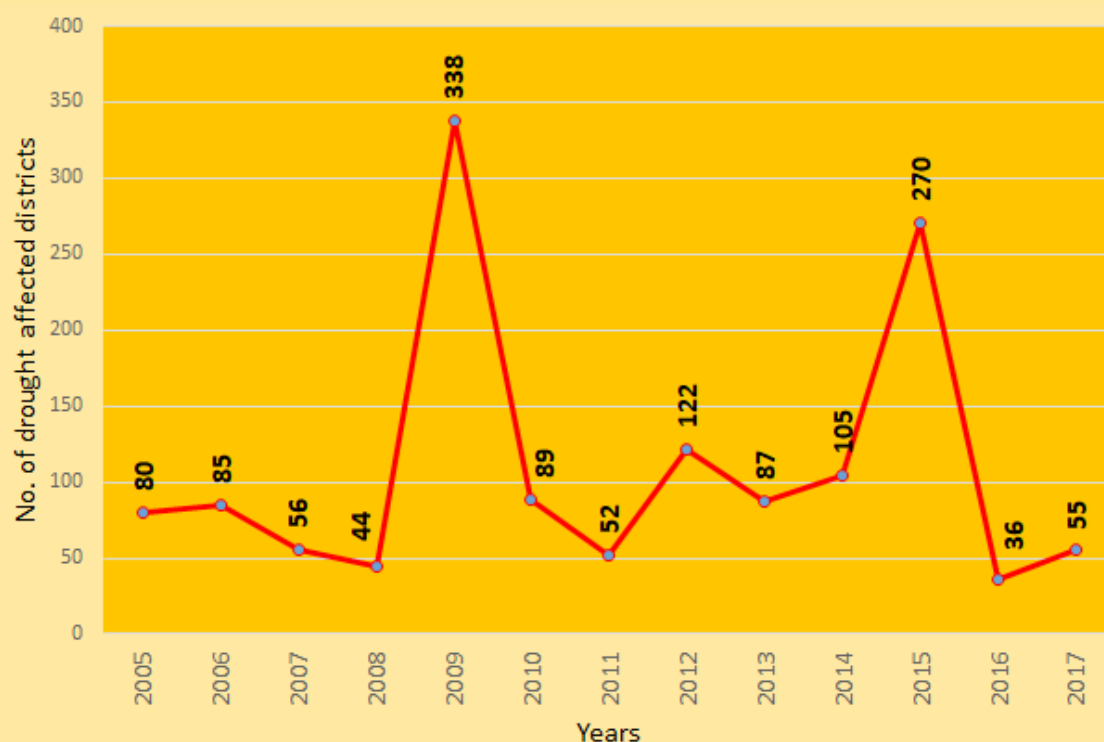


Chart 2: Number of drought affected districts in various years



Source: Chapter: Extreme Events and Disasters, EnviStats India 2019, Vol.I: Environment Statistics, Ministry of Statistics and Programme Implementation, released in April, 2019.
www.mospi.gov.in/sites/default/files/reports_and_publication/statistical_publication/EnviStats/Component%204.pdf

Chart 3: Number of cyclonic storms formed over North Indian Ocean



Source: Chapter: Extreme Events and Disasters, EnviStats India 2019, Vol.I: Environment Statistics, Ministry of Statistics and Programme Implementation, released in April, 2019.

www.mospi.gov.in/sites/default/files/reports_and_publication/statistical_publication/EnviStats/Component%204.pdf

Note: Data in the report entitled EnviStats India 2019, Vol. I: Environment Statistics has been sourced from India Meteorological Department, Ministry of Earth Sciences

The number of cyclonic storms forming over the North Indian Ocean (*Chart 3*) fell from 25 during 1981-90 to 18 during 2001-2010. However, it increased to 20 during 2011-2018. Between 2011 and 2018, the highest number (seven) of cyclonic storms was observed in 2018.

precautionary measures and forecasts require good coordination among various departments/ wings of the Central and state governments. Recommendations made in various performance audit reports by the Comptroller and Auditor General of India can help central and state governments in forming policies

Table 4: Major natural disasters in India

Sl. No. क्र. सं.	Year वर्ष	Type	Affected Population Location/Area	प्रकार	प्रभावित आबादी अवस्थिति/क्षेत्र
1	1990	Cyclone	Andhra Pradesh	चक्रवात	आंध्र प्रदेश
2	1993	Earthquake	Latur, Marathwada region of Maharashtra	भूकंप	लातूर, महाराष्ट्र का मारठवाडा क्षेत्र
3	1996	Cyclone	Andhra Pradesh	चक्रवात	आंध्र प्रदेश
4	1999	Cyclone	Odisha	चक्रवात	ओडिशा
5	2001	Earthquake	Rapar, Bhuj, Bhachau, Anjar, Ahmedabad and Surat in Gujarat State	भूकंप	गुजरात में रापर, भुज, भवाऊ, अंजार, अहमदाबाद और सूरत
6	2004	Tsunami	Coastline of Tamil Nadu, Kerala, Andhra Pradesh, Puducherry and Andaman and Nicobar Islands of India	सुनामी	भारत के तमिलनाडु, केरल, आंध्र प्रदेश, पुदुचेरी और अंडमान और निकोबार द्वीपसमूह की तटीय रेखा
7	2005	Earthquake	Mostly Pakistan, Partially Kashmir	भूकंप	अधिकांशतः पाकिस्तान, आंशिक रूप से कश्मीर
8	2005	Floods	Maharashtra State	बाढ़	महाराष्ट्र राज्य
9	2008	Cyclone Nisha	Tamil Nadu	निशा चक्रवात	तमिलनाडु
10	2008	Kosi Floods	North Bihar	कोसी की बाढ़	उत्तरी बिहार
11	2009	Floods	Andhra Pradesh, Karnataka	बाढ़	आंध्र प्रदेश, कर्नाटक
12	2009	Drought	252 Districts in 10 States	सूखा	10 राज्यों में 252 जिले
13	2010	Cloudburst	Leh, Ladakh in Jammu & Kashmir	बादल फटना	जम्मू एवं कश्मीर में लेह, लद्दाख
14	2011	Earthquake	North Eastern India with epicenter near Nepal Border and Sikkim	भूकंप	नेपाल सीमा एवं सिक्किम के निकट अधिकांश के साथ उत्तर पूर्वी भारत
15	2011	Floods	19 Districts of Odisha	बाढ़	ओडिशा के 19 जिले
16	2011	Earthquake	Sikkim, West Bengal, Bihar	भूकंप	सिक्किम, पश्चिम बंगाल, बिहार
17	2011	Cyclone Thane	Tamil Nadu, Puducherry	थाणे चक्रवात	तमिलनाडु, पुदुचेरी
18	2012	Floods	Assam	बाढ़	असम
19	2012	Floods	Uttarkashi, Rudrapur and Bageshwar Districts of Uttarakhand	बाढ़	उत्तराखंड के उत्तरकाशी, रुद्रप्रयाग एवं बागेश्वर जिले
20	2012	Cyclone Nilam	Tamil Nadu	नीलम चक्रवात	तमिलनाडु
21	2013	Cyclone Mahasen	Tamil Nadu	महसैन चक्रवात	तमिलनाडु
22	2013	Floods/Landslides	Uttarakhand and Himachal Pradesh	बाढ़/भूस्खलन	उत्तराखंड एवं हिमाचल प्रदेश
23	2013	Cyclone Phailin	Odisha and Andhra Pradesh	फाईलीन चक्रवात	ओडिशा एवं आंध्र प्रदेश
24	2013	Floods	Andhra Pradesh	बाढ़	आंध्र प्रदेश
25	2013	Floods	Odisha	बाढ़	ओडिशा
26	2014	Cyclone Hud Hud	Andhra Pradesh & Odisha	हुदहुद चक्रवात	आंध्र प्रदेश एवं ओडिशा
27	2014	Floods	Jammu & Kashmir	बाढ़	जम्मू एवं कश्मीर
28	2015	Cyclonic Storms	West Bengal	चक्रवाती तूफान	पश्चिम बंगाल
29	2015	Floods and Heavy Rains	Tamil Nadu	बाढ़ एवं भारी वर्षा	तमिलनाडु
30	2015	Floods and Heavy Rains	Rajasthan	बाढ़ एवं भारी वर्षा	राजस्थान
31	2015	Floods and Heavy Rains	Andhra Pradesh	बाढ़ एवं भारी वर्षा	आंध्र प्रदेश
32	2015	Floods and Heavy Rains	Gujarat	बाढ़ एवं भारी वर्षा	गुजरात
33	2016	Cyclonic Storms	Tamil Nadu	चक्रवाती तूफान	तमिलनाडु
34	2017	Lightning	Odisha & Maharashtra	आकाशीय बिजली	ओडिशा और महाराष्ट्र
35	2018	Floods and Heavy Rains	Kerala & Uttar Pradesh	बाढ़ एवं भारी वर्षा	केरल और उत्तर प्रदेश

Source: Chapter: Extreme Events and Disasters, *EnviStats India 2019, Vol. I: Environment Statistics*, Ministry of Statistics and Programme Implementation, released in April, 2019.

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Note: Data in the report, *EnviStats India 2019, Vol. I: Environment Statistics* has been sourced from India Meteorological Department, Ministry of Earth Sciences

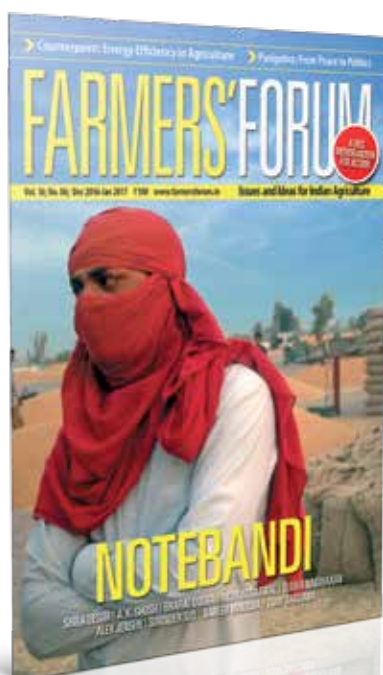
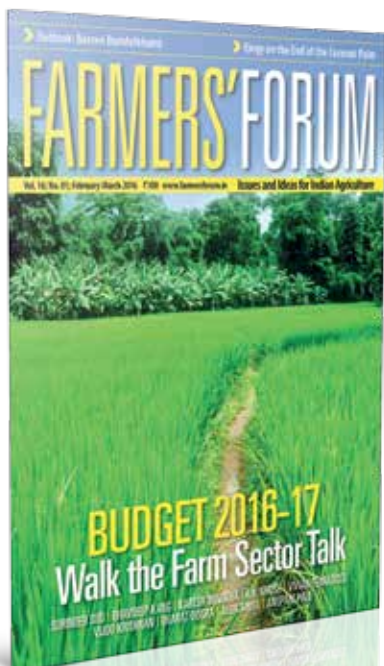
Table 4 shows the major natural disasters that struck India since 1990. For example, the country faced massive floods in 2005, 2008, 2009, 2011, 2012, 2013, 2014, 2015 and 2018 in different states.

Disaster mitigation, disaster management,

and taking effective measures when required. Newer forms of disasters like urban flooding, weather-induced vector-borne diseases like dengue, malaria and such others should be taken into account while forming policies related to extreme weather events. ●

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