Social Demands on Crop Production and the Enslavement of Farmers

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Abstract: *This article is a conversation elaborating on the arguments made by Naren Bedide (Kuffir) regarding the condition of farmers in India and elsewhere. Drawing from a range of sources on the historical and current understanding of agricultural discourses, we argue that agriculture is an absurd economic activity with no possibilities of liberation or exit for farmers. The inherent vulnerability of crops combined with the unpredictability of environmental factors and society's enforced production processes together create enslavement realities for large sections of humans within the practice of agriculture. The farmer's occupation has no element of choice, it will always be pre-modern and cannot be equated to careers or professions with stable incomes and benefits.*

Keywords: Crop Precarity, Indian Agriculture, Farmer's Occupation, Indian Farmer, Crop Vulnerability.

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The pandemic upturned a lot of fixed notions, habits, goals and purposes. A number of students hoping to finish their education and take up some form of salaried careers had to readjust and reorient their expectations. Some had to leave the cities and return to families and assess local work opportunities, oftentimes in agriculture. This article is partly in response to questions and conversations with friends who are trying to make sense of the changed landscape as well as a continuation of the topic of agriculture in previous issues of Prabuddha[1].

Going back to prehistory, the question of choice ended after the first stage of finding the right variety of wheat, maybe—man didn't domesticate wheat; it was wheat which domesticated man. If the first individual cultivators grew wheat for their own needs, perhaps, the first societies tied them to its cultivation for broader social needs: for the clan, then the village, kingdom and so on until the age of empires. At every stage, as the power, influence and greed of the non-working minorities grew, the enslavement of the tiller grew more entrenched as per social, religious and other ideological norms.

In every age, with changes in modes of production, the working man's sovereignty diminished as his productivity increased. Globally, in the middle-ages, for a long period of material and social stagnation, the lives of the vast majority of people, majorly engaged in agricultural and pastoral, artisanal production was determined by what were called their 'stations in life' in Europe. The surpluses produced by the peasants, 'serfs' and others, were through state diktat, siphoned away by the nobility, the 'lords', and the church.

That was roughly the picture of peasant servitude in feudal Europe, and it is fairly representative of the Indian situation, with some marked differences. The relative liberation of the peasant in Europe from his birth-based drudgery was changes in factors of production—like the vast expansion of maritime trade accompanied by great amount of wealth accruing to a new class of urban merchants and traders, roughly; land which was parceled off to fewer landholders and increase in productivity through gains in scientific and technical knowledge; which led to the displacement of large numbers of peasants, their 'proletarianisation'; all these processes triggered social and political revolts which led to a decrease in the power of the nobility and the church (or religion itself, as the interest in scientific research and knowledge gained importance).

How did Indian history differ from the above template?

All the social, political and religious reform movements during the European feudal period drove the region towards the industrial revolution which steadily absorbed the displaced peasants and artisans from the countryside. This didn't happen in India: whereas in the west, the share of people engaged in agriculture right now is around 1-5% of the total population, in India it's still around 50-70% (depending on the region). The biggest difference between Europe and India is that: more

[1] See, Bedide, 2021, 2019a and 2019b.

than half of Indians are still stuck in their medieval 'stations' of life, as the Europeans would have called it, as serfs of a kind. Isn't it absurd to talk of choice in this context, in a country where most people are still stuck in older, pre-modern stations or castes?

In several articles Kuffir has highlighted the futility of agriculture as a viable pathway of production for marginalized communities, in line with organic intellectuals in the past who have emphatically argued against rural-agricultural based livelihoods for bahujans of their respective regions. Phule's (2010) treatise on the unchanging state of farmers and agriculture in his book *Farmers' Whipcord* nearly two hundred years ago is mirrored in Periyar's analysis of rural economics, particularly in his talk on village panchayats, where he explains the improbability of dignified life options in occupations tied to agriculture. Similarly, Ambedkar's views on the same are crystallized in this quote:

"*While the rapid industrialisation of the country is very essential in the opinion of the Federation, agriculture is bound to remain the foundation of India's economy. Any scheme of increased production which does not take into account the re-construction of Indian agriculture is doomed to disappointment*" (Ambedkar, 2019, p. 392).

"*I am of (the) opinion that peasant proprietorship in this country is going to bring about complete ruination of the country. What we want is – although I am not a Communist – the Russian system of collective farming. That is the only way by which we can solve our agricultural problem*" (Ambedkar, 2020, p. 960).

In the context of farming being considered as a professional option in current times, Pushp framed this question: why is growing crops so precarious? A crisp answer could be expected, given the authors' combined backgrounds in economics, anthropology, crop genomics and trade data analytics of agricultural commodities. But the question is far too complex and it provoked several rounds of discussions between us and the uber question of the conjoined realities of the precarity of crops and farmer's lives was broken down into smaller questions to attempt a coherent response.

First, are all plants crops? Crops are a subset of plants that are managed almost entirely for and by humans. Crops are categorized variously based on their use (food crops, feed crops, oil crops, fiber crops, horticultural crops and industrial crops), lifecycle (annual, biennial, perineal), season (summer, winter, kharif, rabi, zaid) and land use. The last one—agricultural crops and land use—is a useful classification for the question at hand. The geography of where a crop is grown is directly related to the kinds of stresses the plant is subjected to. Traditionally, land use of crops is grouped into arable land, pasture land. Arable land has two kinds of crops, permanent crops and seasonal crops. Most of crop production is the seasonal kind, where the crop is replaced every season and this essay is in reference to seasonal crop production.

Crop production is a very old human activity that serves a multitude of human needs and can be understood through multiple filters. In this article, we would like to emphasize that the physiological state of the plant is central to any commonsensical discourse on agriculture. Talking about drought, global warming, labor, prices or plant biochemistry in isolation has led to disconnected discourses that fail to communicate the interconnectedness of agriculture. If we were to develop an ontology about crop production as a historical and current human activity, then the *physiological state of the plant* would be a root concept. In essence, if we remove physiology of plants from the framework everything else related to agriculture comes unglued.

Can we then ask and answer the question: Is crop production like any other economic activity?

From an economic perspective, it would be ideal for this endeavor to be robust, reproducible, and predictable with manageable risk factors. But by its very nature it is a highly complex process, crop production involves the synergetic working together of the physiology of plants, the environmental conditions, the social and economic factors, including the state of and access to technology. As one can see, this sentence has joined terms that are actually large and disparate disciplines, it needs disassembling and reassembling to get some high-level overview of crop production as a precarious macro process.

Let us begin with the physiology of plants. The sedentary lifestyle of plants makes them uniquely different from other living organisms. They are fixed to a geolocation point from seedling to maturity to death. This makes them extraordinarily vulnerable to external stress. Unlike other organisms, they cannot flee to safety from threats of hunger, thirst, disease or disaster - plants have to stay put and deal with crises right there. This vulnerability is balanced by a slew of sophisticated survival mechanisms gained over time as seen through the evolutionary history of plants that has provided resistance to extinction (Salisbury and Ross, 2009).

We can break up crop production conveniently into 3 sequential phases: processes on the field, post-harvest stages and the market.

Vulnerability of crops on the field

The amazing productive capacities of plants have to always be reconciled with their intrinsic fragility to external factors. If you are going to invest in growing a crop and reap its harvests, you have to be keenly aware that the investment can easily be subjected to factors beyond your control, factors that can prevent the crop from reaching full productivity. In other words, a crop, even when grown in a tightly controlled environment (green house, hydroponics) is always susceptible to external stress leading to a complete or partial loss in yield. With every cycle of planting, it is a matter of chance whether the farmer gets a full yield or loses a part or the entire crop.

To get a clearer picture of a plant's vulnerability we have to cut through a maze of agricultural and environmental information and crystallize it into a simple model to answer the question of precarity. Using temperature as a proxy indicator we can quickly and unerringly lay the grounds to explain the innate vulnerability of plants.

Physiological temperature (internal temperature) ensures the integrity of living organisms and the interplay of internal and external temperature (environmental temperature) is the most critical interaction between plants and their environment. Temperature extremes can drastically affect yield by causing irreversible changes to plant development. Such temperature effects are accelerated by soil water deficits or excess and further exacerbated by rising global temperatures and their cascading effects on rainfall, duration and length of droughts, heat waves, rising sea levels which in turn affect crop production. Advanced climate and agricultural models have predicted a drop of crop yield in corn and wheat as early as 2030 due to global warming related climate change (Gray, 2021).

Given this fundamental fragility of crops, how can a farmer control production processes on the field? It is difficult or impossible to maintain the physiological temperature of crops when external temperature regimes fluctuate at critical stages of the crop cycle. The number of other aspects on the field that can derail crop production are too many to list, – disease, disaster (human and manmade), soil conditions, wildlife damage etc., are ever present threats on the field for a single crop to complete a production cycle. The farmer as the production manager has to be on top of all these probabilities with strategies that are both preventive and salvageable. A farmer has to simultaneously play multiple roles – of being the investor, knowledge manager, labor provider, crop doctor, negotiator with different stakeholders such as suppliers, buyers, and with the state apparatus and the market. The fact that farmers have been engaged in this complex endeavor for millenia makes us forget the sheer range of capacities and capabilities called for to make this production successful.

Vulnerability during post-harvest stages

When crop production has been successful on the field with expected yields, the post-harvest processes carry their own costs, risks and unanticipated expenses can be incurred due to challenges of storage and transport logistics. The term harvest means the crop product has been detached from the living plant, but it has moisture content, and the enzyme system is still active which makes it susceptible to physiological changes leading to rotting, insect and microbial damage. That is, the perishable qualities persist post-harvest, and production processes are designed in ways that are contingent on retaining those qualities of freshness or dryness. Different crops have different post-harvest needs and involve time-critical and labor-intensive processes to minimize loss of yield. Cereals, for example, have the typical post-harvest system that prepares the grains for storage and includes these stages: Harvesting, threshing, winnowing, drying, cleaning, grading, hulling,

milling and storage. The products have to go through secondary processes before they are edible or usable for consumption.

The perishability can vary from a few hours for fresh produce to a few months or years for grains. Depending on the use and destination of the crop product, storage is critical and requires monitoring to prevent damage from wetting, excessive drying, wildlife damage and theft.

Transport logistics carry dependencies that are again crop and crop product's desired physiological state. Different crops and their products require specific kinds of transport conditions with assured safeguards against product damage and transport delays. A classic example is sugarcane, there is a rapid loss in sugar content from harvest-to-milling delays due to constraints at the farmers' end and at the factory level, resulting in losses to the farmer.

Vulnerability to market volatility

When crop harvests have successfully reached the selling stage, it has to confront market volatility and possible price losses. As the quality of the product is dependent on the optimum physiological state preferred by the consumers and storage options available at the retailers and market end the expected price for crop yield can never be taken for granted until the moment it is sold.

In summary, the regular cycle of production, distribution and consumption of crops and crop products is replete with known and unknown risks. Therefore, as a business proposition, *agriculture is a high-risk venture both for capital and human effort at all stages* - on the field, during transport and at the market.

So, when we talk of precarity of crops, we're resolutely keeping away from the tougher question: about the precarity of farmers' lives.

Can risks be listed and anticipated and acted upon proactively?

When the survival of humans is predicated on crop production, it being simultaneously essential as well as a risky economic activity, presents a paradox for capitalism. The essential part should make it a desirable business option inviting investment of capital and labor, while the risk-laden part informs the opposite - don't invest!

If it were any other business or production, two straight forward options present themselves: insure against the risks or withdraw from this activity.

Can countries *insure* against the inherent risks to crop production?

History of crop production is thousands of years old, which implies that development of risk management would have co-evolved globally from small to large farms; from states to countries.

They exist in the form of subsidies, insurance, price support, outsourcing, genomic improvement, alternative practices etc.

Let's take a closer look at insurance and its relationship to the physiology of crops. Crop insurance is a risk-mitigation strategy aimed at providing economic stability for crop production. As an insurance category in modern times, it is more recent than property, business, personal and national insurances. Though crop insurance has roots in the ancient and medieval eras and continues on in small, alienated societies in the form of sharing food resources with members who have lost their yield or food supply, its modern versions can add yet another layer of complications, and to be very clear, insurance is not a pay out, as Bedide points out:

"Then there is insurance, which is again tricky. Insurance companies do not want to make losses, obviously. Government might subsidize the premium payments to some extent. But the claims—there are many conditions. And they cover only the costs that the farmer has already borne. He is not getting anything extra. And it is all bureaucratic red tape ridden and it is usually not calculated correctly. And insurance companies, like always, don't want to pay. They come up with various kinds of reasons and pay nothing" (Bedide, 2019b).

USA's attempts to manage risks for American farmers is laudable for recognizing their farmers as those engaged in a financially risky occupation. But it has implications for the small farmers in Asian and African countries. It is well known that the safety nets provided for the American farmers by the USA have a pronounced negative cascading effect on the returns for farmers in the rest of the world. *This article is informed by the critique against American crop insurance approaches but it uses the semantics for illustrative purposes to explore the question of physiological precarity* (Bedide, 2021).

In order to get a high-level overview of how such a complex production process can be insured against known risks, some examples from freely available data are used here to demonstrate the tight linkage of the physiology of the crops and the impact of external factors on crop yield and also to highlight the improbability of small farmers of ever having insurance as an option.

In the US, from 1995 to 2020 the Federal crop insurance payments to farmers totaled $143.5 billion as a result of crop yield loss significantly due to drought and excessive moisture. This is in addition to $103.5 billion in subsidies for farmers' crop insurance premiums. Crop insurance is highly subsidized by taxpayers. 60% of indemnity paid towards crop losses comes from taxpayers and 40% comes from farmers' payment to insurance policies in the USA (Schechinger, 2022).

These payments are distributed across the myriad forms of risks for all crops grown in the USA through federal, state and private agencies. This impacts farmers around the world as the productivity of U.S agriculture grows faster than the domestic food demand, U.S agricultural industrial complex leans heavily on the export markets to sustain prices and revenues (Crop Trust,

2022). “Historically, U.S. imports have increased steadily, as demand for diversification in food expands. U.S. agricultural exports have been larger than U.S. agricultural imports since 1960, generating a surplus in U.S. agricultural trade.”

Can the USA system of risk-management for crop production be scaled to other countries?

The American agricultural ecosystem historically is a simplified system when seen through the lens of crop diversity, it has just a handful of crops that are native to it (Jarvis et al, 2008). Its geography is almost homogenous for very large portions of the continent which allows for planning large scale approaches and policies (CIAT, 2020).

Can countries commit to developing US style risk-mitigation plans for crop production against natural and unnatural risks on the field, in transit and at the market? The follow up question would be - can taxpayers of developing countries be taxed to contribute up to 60% of farm insurance?

The answer is a resounding no. Agriculture as a production system is labor intensive and it will be the reason for large sections of humanity being trapped in this ‘occupation’. These sections invariably are historically marginalized. The reasons for being a farmer is not a question of free choice but it is an imposed condition by social structures in regressive societies that continue to view manual labor as a just option reserved for certain sections of the societies. The global trend away from agriculture has been steady all over the world. In India, it regresses as shown in the charts below.

Can countries afford to *withdraw* from agriculture?

As strange as it seems, this is exactly what has happened in the western countries (see Chart 1 & 2). These graphs capture the developed countries’ move away from the labor-intensive risky venture of agriculture as seen by the continuous and steep decline of the share of the labor force employed in agriculture.

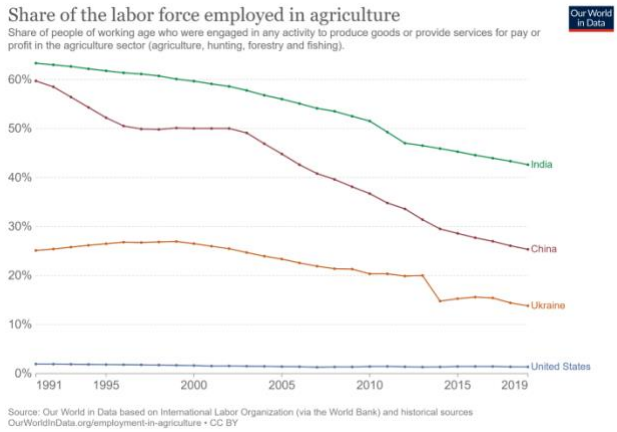


Chart 1

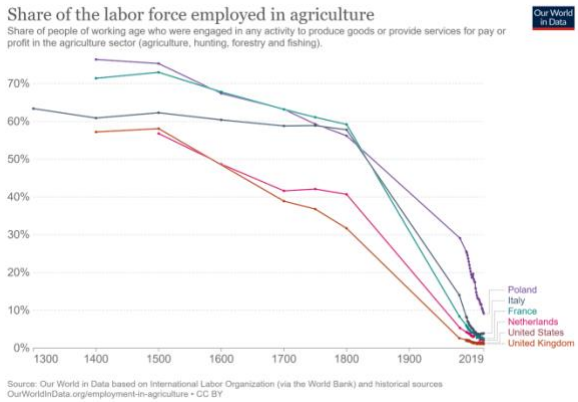


Chart 2

Most of the developed countries have brought down their share of the labor force in agriculture to 10%. While in India it still stays above 50%:

According to Bedide (2019a): "All through the Five-Year Plans and Green Revolutions and scores of other programs and schemes and acts, the number of farmers in India actually increased several fold, not decreased due to additions of capital and advances in technology. Broadly, there could be two possible explanations for this: one, the obvious reason is that the Indian economy has not grown and expanded in pace with the growth in population, especially the rural agriculture dependent population, to absorb them into new jobs in new fields. Two, the Indian state has not invested even a fraction of what is needed to equip this section of rural India with necessary education, access to public services and social infrastructure and security to prepare them for new livelihoods and careers. Both explanations seem very plausible, because this uniquely Indian tragedy is a result of prolonged economic stagnation and more importantly, social stagnation."

Then where is the labor displaced in developing countries? Which sectors employ them now?

This graph by the ILO shows that the labor force has shifted to the service sector, or salaried jobs while in India the Bahujan masses remain trapped in agriculture.

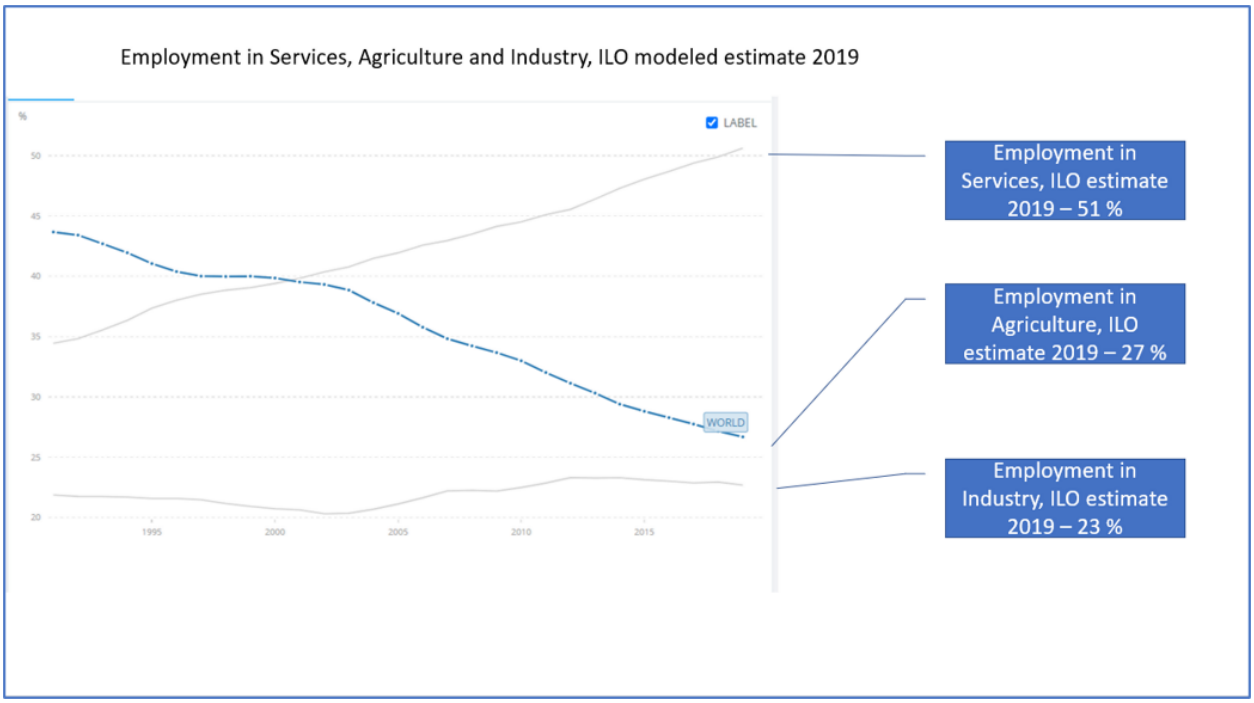
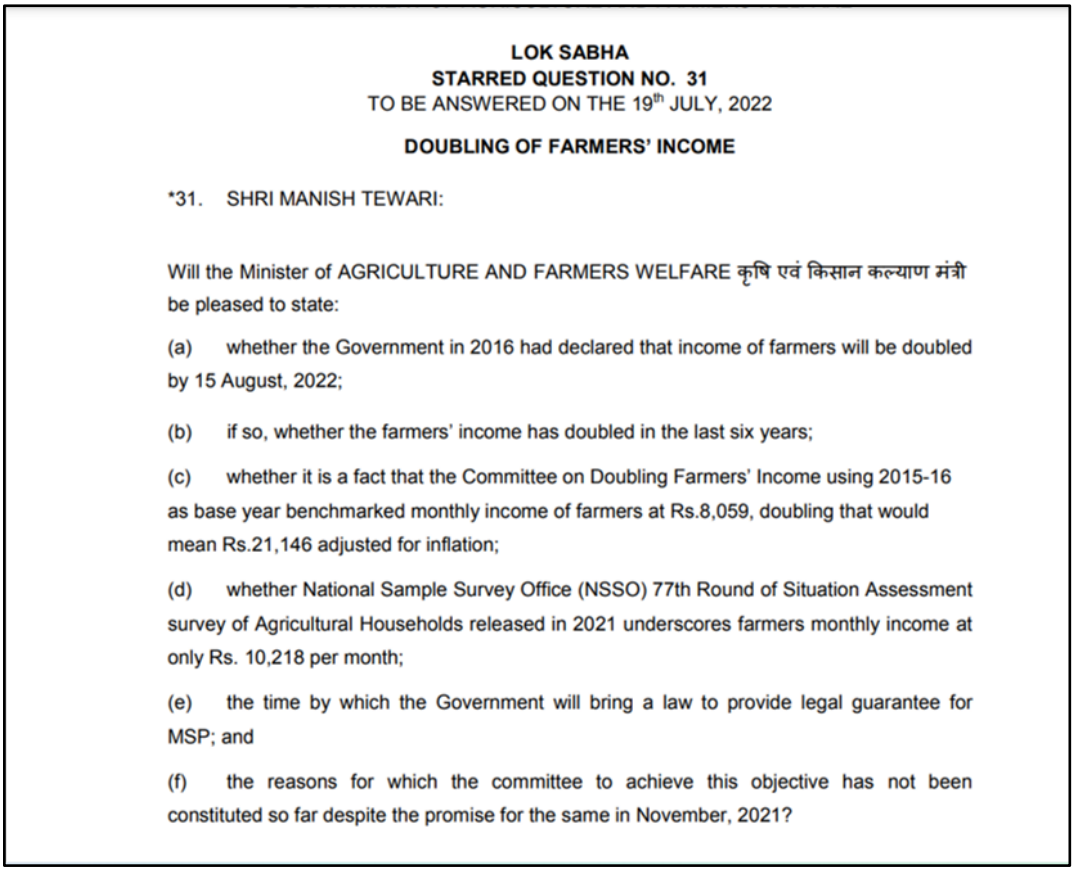


Chart 3

Clarifying the semantic obfuscation to ask and answer questions such as those asked in Prabuddha: 'Who is the Indian farmer?" (Bedide, 2019a), "Is there a way out for the Indian farmer?" (Bedide, 2021) should help clear the cloudy discourses around agriculture and aid youngsters thinking through the issue of why crop production is not a viable business and the perpetual enslavement of Indian farmers is tightly linked to the social structures or caste system.

As we write this article the Lok Sabha is debating the question of farmers income and farmers suicide (GOI, 2022).



LOK SABHA
STARRED QUESTION NO. 31
TO BE ANSWERED ON THE 19th JULY, 2022

DOUBLING OF FARMERS' INCOME

*31. SHRI MANISH TEWARI:

Will the Minister of AGRICULTURE AND FARMERS WELFARE कृषि एवं किसान कल्याण मंत्री be pleased to state:

(a) whether the Government in 2016 had declared that income of farmers will be doubled by 15 August, 2022;

(b) if so, whether the farmers' income has doubled in the last six years;

(c) whether it is a fact that the Committee on Doubling Farmers' Income using 2015-16 as base year benchmarked monthly income of farmers at Rs.8,059, doubling that would mean Rs.21,146 adjusted for inflation;

(d) whether National Sample Survey Office (NSSO) 77th Round of Situation Assessment survey of Agricultural Households released in 2021 underscores farmers monthly income at only Rs. 10,218 per month;

(e) the time by which the Government will bring a law to provide legal guarantee for MSP; and

(f) the reasons for which the committee to achieve this objective has not been constituted so far despite the promise for the same in November, 2021?

Image 1

A doubling of monthly income of farmers from Rs 8,059 in 2016 is still being debated! These Lok Sabha questions are the most revealing insights needed to indicate the extreme marginalization of farmers as Kuffir/ Bedide (2021) concluded in his article:

"The key issue is: will the state and savarna 'civil' society treat the farmer as human ever? Or will it pin him down as responsible and as culpable for both production and under-production, fixing it as his caste responsibility? Second, not providing him any kind of salary or waivers which justifies

your demands of him, which I call caste demands, as his duty to serve the higher castes, the Brahmin, upper caste consumers or masters. Because he has no education and he has no way to organize himself he goes into his caste occupation. He can't organize himself and ask for his rights. You are taking advantage of that. This is caste serfdom, this is caste slavery and we can't discuss corporates or Modi government alone because you have to discuss freedom first and this is a political question."

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