Financial and Organizational Restructuring of Agricultural Production in India

*Ayush Prasad

Abstract

India's agricultural sector employs the largest number of poor in the world. The paper analyzed the structural flaws in organization and financing of the process of production in India. The paper presents a policy initiative for the establishment of formal economic institutions amongst the small and marginal farmers that will lead to economically efficient production processes and increase in productivity that will lead to real growth. It also described a method to infuse equity financing into agriculture by monetizing tenancy. It analyzed the benefits of integrating the food value-chain and aggregation on the income of producers. Today, the sector receives strong State intervention, and with the implementation of the steps proposed in the paper, the sector could be liberalized, which would lead to reduction in poverty. The policy is a disruptive innovation in the field. The implementation of the policy would have far reaching implications in charting an alternate course of public policy in the sector.

Keywords: **prices, agricultural employment, farm enterprise, agricultural credit, land tenure**

JEL Classification : Q110, Q12, Q13, Q14, Q18

Paper Submission Date : July 7, 2013; Paper sent back for Revision : August 5, 2013; Paper Acceptance Date : May 8, 2014

Between 2001 and 2011, India's population rose by 1.7% (compounded annual growth rate for the period) and reached over 1.21 billion in 2011 (Census of India, 2011). The challenges of rising population have been compounded by an increase in per-capita demand for food that is driven by real growth in incomes, especially among the lower income groups who have a higher marginal propensity of consumption. However, the GDP growth in the agriculture sector stagnated to 3.6% during the 11th Five Year Plan period (2007-12). This mismatch of demand and supply has led to an acute increase in food prices by around 10% (Ministry of Finance, 2013). Agriculture is often called the mainstay of the Indian economy as it employs over 50% of the work-force of 430 million workers, but formed just 14.5% of the GDP in 2011-12 (12.3% : agriculture, 1.4% : forestry & logging, and 0.7% : fisheries). Between 1960-61 and 2011-12, there was a 33.5% point reduction in the contribution of agriculture to India's GDP, and the labor employment fell by about 19.5% points, which approximates to an 18% reduction of labor productivity in the sector (Ministry of Finance, 2013).

The low labour productivity within the sector can be attributed to an institutional problem of small landholdings. Agriculture Census of 2011-12 reported that there are 138 million landholdings in India with an average size of 1.16 hectares; 118 million (85%) landholdings are of small and marginal farms, that is, farm land which is less than 2 hectares in the cultivated area (Ministry of Statistics and Programme Implementation, 2003). The low labour productivity has made agriculture an unprofitable economic activity, and this has been proven by the National Sample Survey Organization's (NSSO) data, which found that income per-hectare for a marginal farmer was INR 1659/hectare-year, while consumption was INR 2482/hectare-year, leading to a negative saving of INR 823/hectare-year. The same report also showed that small farmers had a negative saving of INR 655/hectare-year. National Statistical Commission (NCEUS- 2008) commented in its report that this deficit is plugged by borrowing. This has created a problem of high levels of indebtedness among the farmers. The NSSO study in 2003 found that out of the 89.35 million farmer households in the country, 43.42 million were unable to come out of the debt trap. According to the report, 4.9 million farmer households in Andhra Pradesh (82% of its

* *Probationary Officer,* State Bank of India, Himmatpuri Branch (04838), Block 27, Trilokpuri, New Delhi-110 091.
E-mail : ayush4@gmail.com

farmers) were in debt, while in Uttar Pradesh, 6.9 million farmer households were in debt. More than 45% of the marginal farmers in India were in heavy debt. In Andhra Pradesh, over 73% - 83% (2004) of the marginal farmers borrowed money from the informal sector. Across the country today, 22.6% - 58% of the loans obtained by the marginal farmers were from the unorganized sector (Ministry of Statistics and Programme Implementation, 2003). The indebtedness has had several social ramifications, and among them is "Farmer Suicides". The records of the National Crime Records Bureau showed that 216,500 farmers in India had committed suicide between 1997-2008 (Patel, 2007).

These alarming statistics forced the Government into action, and it has undertaken several steps to ease the debt burden in rural India. Under The Agricultural Debt Waiver and Debt Relief Scheme (2008), INR 600 billion worth of total value of the loans were waived for 30 million small and marginal farmers (estimated at 500 billion rupees)and a One Time Settlement scheme (OTS) for another 10 million farmers (estimated at 100 billion rupees). The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), the largest public works program in the world, injected Rs. 1300 billion into the rural economy through wages between 2006-12 (Ministry of Finance, 2009).

Capital and Debt Funding

In all sectors apart from agriculture, small & medium enterprises are usually financed by a combination of debt and equity. However, agricultural processes in India are almost entirely funded by debt and savings. In 2012-13, the debt to GDP ratio in the agricultural sector was 80%, while the weighted average of the Indian economy stood at 55% (Ministry of Finance, 2013). It can be calculated that the cumulative average debt/hectare of agricultural land is approximately INR 38,000, and this debt is rising every year ; 82% of the investment in the agricultural processes on the field is by the farmer, and at most instances, is financed through credit (Ministry of Finance, 2013). The government encouraged this by providing INR 5750 billion worth of agricultural loans in 2011-12 and had set an estimate of INR 7000 billion for such loans in 2012-13 (Ministry of Finance, 2009).
Debt funding of agriculture in India has the following inherent problems:

(1) About half the net sowed area in India is under irrigation. This makes the non-irrigated land almost completely dependent on monsoons (Ministry of Finance, 2009). Chances of crop failure due to intensity of weather conditions (either high or low amount of rain) or crash in market prices due to excess supply are high. Debt funding is insensitive to the weather and the market.

(2) Weather conditions affect a large number of farmers at the same time. At a time of drought, large scale default in payment of loans by farmers can affect the stability of the financial sector in India due to the large amount lent to the sector ; India would be forced to import food grains, which would lead to an increase in the current account deficit, affecting the value of the currency and thereby the macroeconomic fundamentals of the country.

(3) At the micro- level, the entire risk of the investment and related economic activities for agriculture production is on the farmer. The financier does not share the burden of the risk.

(4) Due to lack of risk and involvement, financiers also do not provide any other form of support to the farmers such as technical know-how or market information.

(5) The farmers are expected to repay the loan in monthly installments. However, the agricultural cycles are not monthly and also vary according to the crops. Farmers are often forced to borrow from an alternate source to pay an installment to the primary source of loan.

(6) The installments remove operating cash with the farmers during crop cycles. Unlike equity dividends, it cannot be withheld and re-invested for further growth. During my field visits, I often found that debt was almost never invested, but used to meet current needs of seeds and fertilizers or to service another debt.

(7) Repayment of debt is only through income earned by sale of produce. However, in equity, funding is recovered through a rise in value of the investment and through dividends.

Women and National Rural Livelihood Mission (NRLM)

Women constitute a growing percentage of the rural population due to the migration of men to urban areas and them staying behind. MGNREGA increased the real wages for women in rural areas by an average of 3% every year during 2006 - 2011, and this encouraged the participation of women in economic activities ("Rising farm wages will lift all boats," 2013). Women's literacy rates, child rearing obligations, and cultural constraints are seen to make them less qualified than men for non-agricultural employment ; 86% of the female workers in rural India are dependent on agriculture for their livelihoods and 38.7% of the rural adult women work on marginal farms (United Nations Development Programme, 2007).

According to the Ministry of Rural Development, Government of India :

> To address the concerns of livelihood and elimination of poverty among rural women, a program called Aajeevika - National Rural Livelihoods Mission (NRLM) was launched by the Ministry of Rural Development, Government of India in June 2011. The mission aims at creating efficient and effective institutional platforms of the rural poor, thereby enabling them to increase household incomes through sustainable livelihood enhancements and improved access to financial services. (n.d., para 1)
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> NRLM has set out with an agenda to cover 7 crore BPL households, across 600 districts, 6000 blocks, 2.5 lakh gram panchayats and 6 lakh villages in the country through self-managed self-help groups (SHGs). SHG is a village-based social group usually composed of 10 - 20 local women. SHGs are mobilized by NGOs, government agencies, or banks. (n.d., para 2).

Incorporation of the Company

Most members in SHGs come from households that own marginal or small farms. Within most SHGs, women are supporting other women by providing capital to start or expand individual livelihoods. However, two or more women taking up loans for a joint enterprise is quite uncommon as I discovered during my research in districts of Rae Bareilly in the northern state of Uttar Pradesh and Kurnool in the southern state of Andhra Pradesh. I found that they did not form joint-ventures due to lack of formal structure and ownership issues. The scope of SHGs, established under the purview of NRLM, could be extended by organizing them into equity funded economic institutions, where its members carry out agricultural production together. Let us assume that 5 members of a SHG come together proactively, without external directions, to incorporate a publically traded company, called ABC Farmers:

(1) Each SHG member who is incorporating the company would lease out all or part of their land for a long period of time - say 25 years. It is preferable that the leased lands are in continuation with each other.

(2) Land titles define the owner of the land. It is often the male members in the household who hold land titles, while most SHGs have women members. Women owned less than 2% of agricultural land in India as of 2008 (Holmes, Sadana, & Rath, 2010). Land titles can be redefined as jointly owned by a household. This may require amendments to revenue land laws of a few states of India.

(3) The company would carry out valuation of the land that has been leased to it, as per government guidelines.

Table 1. Share Pattern of a Fictitious Company (ABC Farmers)

Farmer's Name	Land Area	Net Valuation in INR
A	2 hectare	20 lakh
B	1 hectare	10 lakh
C	3 hectare	30 lakh
D	0.5 hectare	5 lakh
E	3.5 hectare	35 lakh
Total	**10 hectare**	**1 Crore**

(4) The net value of the lease would not be paid in cash to the farmers, but in terms of equity shares of the company. These shares would form the basis of ownership of the company for the SHG members.

Assuming that each hectare of land lease for 25 years is worth ₹ 10 lakh, we could obtain the following share-pattern as represented in the Table 1.

(5) The company would get capital investment through selling equity. This money could be invested by SHG federations, banks, mutual funds, and private individuals, other farmers, or even the government.

(6) To protect the interests of the farmers and to prevent wasteful investment, the capital investment could be limited by a law to match up to the valuation of the lease of the operational land. Let us assume that ABC Farms got a cash investment of ₹ 1 crore from the local SHG Federation. Therefore, 50% of ABC Farms is owned by the SHG Federation while Farmer C owns 15% and so on.

(7) In the future, to raise more capital, the company would have to get more farmers to take up equity by leasing their land to the incorporated company. This ensures that there is no over-financing and the interests of the farmers are protected.

Tenancy and Ownership

Most farmers interviewed by me were not comfortable with the idea of transfer of ownership of their land to an external agency, even though that agency was partially owned by them. The ability to trade their shares in the market was seen as a threat to losing their lands. Therefore, tenancy is suggested as a way to create shareholding in the company without disturbing the ownership of the land. It also protects the farmers from stock market fluctuations. The monetary value of the tenancy of agricultural land for a year is small. To increase the net value, and therefore, the percentage of ownership to the company of individual farmers, a long duration pledge of the tenancy has been suggested. This duration could be mandated by law and could be different for different states. These shares could be treated as locked-in shares of the promoters.

➲ **Purchase Ratio :** It is one of the many ways of determining the duration of the lease period. It ensures complete liquidity of the company (such as ABC Farms) at the time of its incorporation.

$$\alpha = \frac{\text{(Average Price of 1 hectare of Agriculture Land)}}{\text{(Average Rent for 1 hectare of Agriculture Land/Year)}}$$

For example, during my field work in the state of Madhya Pradesh, I found that one hectare of land could be purchased for INR 155,000 and could be leased for a year for approximately INR 6,000. Therefore α = 25 years and 10 months. The law in the state of Madhya Pradesh could, therefore, mandate that the incorporating

companies would have to lease land for 25 years to give equity to the farmer. It is an assurance to capital investors that for the next 25 years, the company would operate on the leased lands.

➲ **Trading Shares :** Some states in India allow only agriculturists to buy or lease revenue lands. To enable investments from non-agriculturists into the incorporated companies, these laws would have to be amended. The incorporated agricultural company should have the freedom to be traded in any stock-market in the country. I feel that most of them would choose to be traded in one or more of the 38 regional stock exchanges. This would give a major boost to these exchanges as they would have more volumes of share trading. The government could support them by training stock brokers in rural India and providing an access point in each village for such enabled trading.

➲ **Management :** As per Section 149(1) of India's Companies Act, 2013, the shareholders of the company, who would include in this case financial investors and farmers, would appoint a board for oversight and corporate governance in their annual general body meetings. The board would appoint a qualified management team to run the company on a day to day basis. This team would use the invested capital and the leased lands to operate and grow the company.

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Impact Analysis

The impact of the change in policy would be noticed in various ways and would herald a socio- cultural change in rural India.

Availability of Capital

➲ **Capital for Personal Use :** Due to poverty, farmers in India do not have operating capital and are forced to borrow from various sources such as non-banking financial institutions (NBFCs), money lenders, banks, SHGs, and cooperatives. Subsidized loans have been made available through state intervention, but often, the amount of capital that the farmer is eligible for is only enough to meet immediate needs and is not enough to invest in building a stronger future. SHGs have encouraged a habit of saving that provides necessary seed capital for investment. It is an asset on which loans have been taken through inter-lending and then from other financial institutions. For the farmer, the shares of the incorporated company would serve a similar purpose. The farmer could sell (with greater relative ease) the shares, without losing ownership of the land, and get cash at prevalent markets rates (consistent with inflation). The farmer could also take a loan mortgaging the share.

Share prices at Bombay Stock Exchange's sensex had a compound annual growth rate of 15.87% for a long period of 20 years from 1991 and 13.96% for a short period of 3 years from 2009 (Balasubramanyam & Nayak, 2013). Today, most farmers prefer to invest in gold due to stability in price rise, low monetary value of the minimum investment, which also has a compound annual growth rate of 10.045% for a long period of 20 years. Equity investments would be a better investment option for farmers. The rise in investment value quoted above does not take inflation into account, which is quite high in India.

➲ **Capital for Agriculture :** The invested capital in the company would be used for agricultural and other associated purposes. Due to the upfront availability of large capital and consolidation of land, it could be used to buy equipment such as tractors ; to develop local infrastructure such as storage for seeds & grains ; to lease more land ; to construct local irrigation facilities without state support ; or for taking up debt. The investors would earn returns on their investment through the rise in value of the company and annual dividends. The company could hold back the payment of dividends and re-invest the money to further grow the company. Growth of the agriculture sector is dependent on the gross capital formation, which is at 19.8% of the GDP of the sector (Ministry of Finance, 2013). Accounting for the rise in credit available to the sector and by keeping all other costs

fixed at current levels, it would take 5-6 years, based on back of the envelope estimations, to organize all marginal farmers in India into these incorporated agricultural companies. The impact on the funds would be higher, and the administrative costs would be much lower.

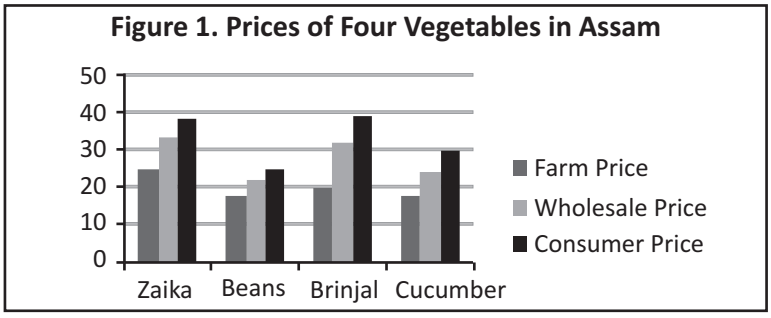
➲ **Employment - Nature & Number :** Labor productivity of the agricultural sector is the lowest in among all the sectors of the Indian economy, and as a result, 62% of the farmers are below the poverty line (The World Bank, 2000). Many farmers confessed to me that they want their children to work in other sectors of the economy after they grow up. They are often investing large amounts of money to get their children a good education, which is often seen as a way of acquiring jobs in the organized and non-agriculture sector. The agricultural sector in India has almost closed its doors to people belonging to non-agricultural households due to lack of training opportunities and existing laws in many states that prevent non-farmers from buying agricultural land. By forming corporatized companies, employment opportunities (such as for engineers and managers) would be created for a wide range of skills that presently find no application in agricultural processes. These jobs would be financially attractive and would be based in the rural areas.

➲ **Jobs for Farmers :** Ideally, the farmers who would incorporate in the company by leasing their lands to it should be employed by the company. The employees would earn a monthly salary for their labor. They would also get benefits of industrial labor such as pension to old farmers, medical insurance, maternity leave, and so forth. The company would be able to efficiently manage its employees. Problems such as labor shortage during harvest and absentee farmers (due to poor health, age, or migration) would be managed better. It may lead to rural – rural migration as well, but will introduce market efficiencies in the agro-labour market. The role of the farmers may change from tillers of the soil, to people involved different specialized activities such as storage of grains, guards, maintaining equipment, and so forth. To avoid the mistakes of the cooperative societies in India, the ownership and management of the company must be kept separate. If an illiterate farmer has been elected as the chairman of the company, he should continue to be the gate-keeper for his day-job. He would earn a salary for all his labor in addition to the annual dividends in the company's profits.

➲ **Social Discrimination :** In certain states, such as in the northern state of Bihar, agriculture is extremely labor-intensive on small landholdings that has led to disguised unemployment. There may be situations where not all owners of land find employment with the company they incorporated with their lands. This would be required for the profitability of the company by increasing labor productivity. The instances where a farmer belonging to a weaker section of the society (especially maha-dalits & tribals) incorporates a company along with farmers belonging to other sections of the society, he may not find employment in the company incorporated by him/her. The law must ensure protection in employment for people belonging to weaker sections of the society.

➲ **Profitability :** To provide the above-mentioned benefits and sufficient returns on investment, agriculture would have to be more profitable and earn greater income. As discussed earlier in this paper, small and marginal farmers lose some money in every crop cycle. But large farmers (with conciliated land holdings of over 10 hectares) earned a profit INR 3249/hectare (Ministry of Statistics and Programme Implementation, 2003). The main reasons are the consolidation of land, better local infrastructure (access to irrigation), and greater power in the market. The policy initiatives described in this paper would create an enabling environment and would provide incentives for marginal and small farmers to achieve growth.

➲ **Bargaining Power in the Market :** The government has taken several steps to increase the bargaining power of the farmer in the market place. Several commercialization (forward linkages) based initiatives such as formation of Agriculture Produce Marketing Cooperation (APMC), foreign direct investment in the retail sector, and mobilization of SHGs have tried to integrate the produce for marketing. Also, minimum support price (MSP) has tried to include the cost of production and a healthy profit margin for the farmers. These steps have increased the



percentage of the price that is transferred to the farmer, and hence their profitability.

I studied the distribution of the price paid by the consumers, between the producers, distributors, and retailers in different sectors of the Indian economy. I found that in the pharmaceutical sector, on an average, 79.82% – 84.40% of the price of a drug paid by the consumer was transferred to the producer, while the distributor got a share of 4-8%. The commission for the retailer was fixed between 12-20% of the price of the drug paid by a consumer.

To understand a similar transfer of prices in the Indian agricultural sector, I chose 10 kg of rice and 10 kg of vegetables and followed it from the farm gate in the north Indian state of Haryana to the markets in Delhi in the first week of October 2013. I found that only 31% of the price paid by the consumer for the rice went to the farmer (producer), while for the vegetables, only 12-15% of the consumer price was transferred to the farmer. The cause for price escalation is speculative commodity trading along the value chain. The integrator of the produce (middlemen) made most profits of around 50% of the price paid by the consumer. Even if the middlemen (approximately 50 million people in India) are eliminated from the supply chain, and the farmers directly connect with large retailers, the bargaining power is still skewed against the farmer. The procurement agency always fixes the price, and the farmers are forced to comply.

A study was conducted in the eastern state of Assam for prices of four vegetables in 2012, and the results are shown in the Figure 1. In most cases, the prices were entirely determined by the market, and were almost independent of the cost of production. Considerable escalation in prices could be noticed due to commodity trading in the value chain. Only beans had a standard escalation in price while moving in the value chain. Due to poor storage facilities at the farm-gate level, many farmers were often forced to resort to distress sale of their produce at very low prices.

The incorporated companies being proposed in this paper would integrate large volumes of farm produce and thereby increase their bargaining power in the market. As the companies grow, I expect them to undertake a process of forward chain integration. They would have partnerships with retailers and food processors, and later, could even build their own retail and processing capacities. Unlike cooperative units in the past, due to pre-defined property rights and introduction of people with professional skills, the proposal would change the dynamics of the market.

➲ **Planning :** Due to poor information about consumer demand and the desire to maximize profits, I have noticed instances of overproduction of certain crops during a particular season. It is the same crop that was under-produced in the last crop cycle. Furthermore, large areas of India are producing crops that are unsuitable for those regions, with regard to availability of water, soil type, and local climate. A typical example is the production of water-intensive cash crops such as sugarcane in leeward regions of Maharashtra. Large FMCG sector companies use data-analytics to predict, and often have, with over 97% accuracy, predicted the location and time of demand of FMCG products. Such planning leads to efficient supply chains and profit maximization. Over a period of time, due to availability of capital and induction of skilled personnel, the incorporated companies would be able to develop capabilities in analytics, and so forth. It would guard against market crashes and drought by proper production planning.

➲ **Wastage :** At the distribution level, wastage is very frequent due to lack of storage facilities, improper transportation, and inability to access the markets. A nation-wide study of post-harvest losses for 46 agricultural products in 106 randomly selected districts of India was conducted by CIPHET in 2010. It revealed that wastage in fruits and vegetables was 5.8% to 18.0 %, while wastage for staple crops was 3.9% to 6.1%, and for cereals & pulses, it was 4.1 % to 6.3%. The data was expressed in percentage of wastage per unit weight of production (Nangia, 2012).

Over 70% of the storage facilities (by volume of storage capacity) are owned and operated by Central & State Governments (TNAU Agricultural Portal, 2011). These facilities are centralized and inadequate. But a major portion of wastage in storage occurs near the farm gate when grains are stored in straw bins or mud-pots. With the available capital, the incorporated companies would be able to develop storage infrastructure at the farm gate. Training would ensure better quality storage. Small and marginal farmers use 56% more fertilizer/hectare than the national average (TNAU Agricultural Portal, 2011). Wastage of electricity, seeds, fertilizers, pesticides, and water would reduce by proper accounting and training. It would also reduce the harmful effects on the environment.

➲ **Innovation & Training :** The innovations from agricultural universities, CAPART (a government body to promote innovations for the rural sector), and other farmers are not available to most farmers. The companies could form an intermediary level between the institutions and farmers, thereby improving the access to innovations and knowledge. Furthermore, large companies could have their own innovation labs to improve productivity in their regions of operation. India does not have the training infrastructure to directly train all the 230 million people employed in the agricultural sector. Due to extreme poverty and illiteracy, many of them are not in a position to get trained and implement the training without continuous supervision. The companies could build specialized skill sets amongst their employees. In this manner, it would be possible for the information would trickle down to the grass root level.

➲ **Food (Quality and Prices) :** Due to the government's policy of minimum support price (MSP), there is hardly any incentive to improve the quality of production as there is not much difference in price between high quality produce and ordinary produce. Due to competition and development of brands, the newly formed agricultural companies would be under pressure to improve the quality of production. This would encourage innovation, and consumers will get better quality products. The greatest impact of the integration of the supply chain would be stability of prices for consumers and good quality supply in adequate volumes to meet current demand.

About 60-70% of the staple crops produced by small and marginal farmers are retained by them for domestic consumption or for barter (Ministry of Statistics and Programme Implementation, 2003). Due to poor storage facilities at home, a large proportion of stored grains are wasted. The farmer households also eat only one kind of food, which leads to malnutrition. Since about 70% of the food produced in India is from the marginal and small farms (Ministry of Statistics and Programme Implementation, 2003), the size supply in the market would increase by over 230% in case there is a complete procurement and higher efficiencies as discussed in the present paper. This would also increase the number of consumers by 48.67%, assuming that all food needs of marginal farmers are met by their own produce. If the per-capita consumption remains the same with no change in other associated costs, in a linear model, the farm gate prices of raw food should fall by 44.85%. This is a weighted average price for all the agriculture products on an all India basis.

Minimum support price (MSP) is determined by a statistical method by computing the cost of production along with a profit margin. The increase in efficiencies, supply chain integration, and reduction in wastage would further reduce the consumer prices by 15-20% and increase supply by 10-15% in volume. The 'economy of scale' should ideally reduce prices, but the rural infrastructure is in a poor state in different parts of the country. Hence, the prices may go-up unless steps are taken by the government to improve the public infrastructure to handle increased capacities. Increase in labor productivity would reduce the cost of production. Since small and marginal farmers work on their own fields, the labor cost is not considered in the cost of production. Furthermore, the

farmer would earn from annual dividends and monthly wages. Adding to that, creation of higher paying jobs would increase the net cost of labor.

There is also pressure on the government to remove subsidies from the agricultural sector. The government gave a subsidy of INR 65,974 crore in 2012-13 for fertilizers, and different State governments subsidized electricity, water, and so forth (Ministry of Finance, 2013). If all of these subsidies are removed, the prices could be expected to rise by 20-25%. Overall, the prices may remain the same or may marginally reduce from the current levels. The chances of an increase in prices beyond normal inflation are low.

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Impact on the Government and the Economy

Similar to NRLM and MGNREGA, the policy initiatives suggested in this paper would enable many poor households to access cash (through wages and dividends) and loans backed by new form of assets in shareholdings. This additional cash would encourage the farmer households to consume different kinds of products. Since rural people have high marginal propensity to consume goods of basic necessities, it would rapidly accelerate the growth of the economy, especially in the food, FMCG, and real estate sectors. Ability to trade shares and increased cash incomes would encourage the growth of banks in rural India. During my travels to remote rural villages, I observed that most banks encouraged the rural people to open only savings accounts in remote rural villages. If the suggestions given in the present paper are implemented, the banks would also have to provide DEMAT accounts to farmers to enable trading of shares and cross-sell many of their products, thereby increasing their profitability by operating in such areas. The business correspondents of banks providing last mile services in rural areas would earn more money due to increase in the number of transactions.

➲ **Government Expenditure :** In the initial few years, the Government may have to invest in the newly incorporated agriculture companies as private capital may be hesitant to invest. The direct participation of the government in GCF in the agriculture sector would increase in the short-run and would act as a stimulus to encourage investments from private and institutional investors. The government would have to pass legislations and issue regulations to create an enabling environment for the formation of such companies. It would also have to use the official channels of revenue, agriculture, food processing, and rural development & panchayati raj departments to create awareness amongst the SHGs and other bodies about the new policy. The revenue department of the state governments would have to provide proper land titles, and in some cases, evaluate the land tenancy. The government would then have to identity companies and invest capital in them through banks. The disinvestment by the government in a phased manner would yield greater returns than the subsidized loans. Since these companies need to be competitive, the government could do away with subsidies. It would further save government expenditure.

➲ **Government Revenues :** The policy initiative would create several professional jobs in the agricultural sector. These jobs would directly produce a new group of people who would be eligible to pay income taxes from rural areas. Corporate taxes contributed 40% to the revenues of the union government. The industry formed 27% of the GDP, but contributed 80% of the corporation tax, while the contribution of agriculture to it was only 5% in 2012-13 (Ministry of Finance, 2013). With the formation of corporatized companies, the government would also earn corporate taxes from them. Though a tax holiday for the first 5 years is suggested, it would not affect current government revenues. The increase in processed and packaged food products would boost indirect tax revenues for the government.

➲ **Land Acquisition :** Acquiring land incorporated as an agriculture company would have two stages- acquiring tenancy and acquiring ownership. Let us assume that an agriculture company- ABC Farms operates 100 hectares of land, and the government wishes to acquire about 10 hectares of its land. The market capitalization of the company on a particular day is said to be around INR 15 crore.

(1) The acquiring agency would have to call for a general body meeting where disinvestment of 10% of the company would be discussed. This would have to be voted to as per the guidelines on basis of the Companies Act, 2013.

(2) The acquiring agency would pay 10% of the market value to the agriculture company, which would be INR 1.5 crore.

(3) This money would be an income of the company and it is up to the management to decide what it wishes to do with the money.

(4) The acquired shares would be taken off the market. The government has now acquired the tenancy to the land.

The next stage would be to acquire the ownership of the land. The acquiring agency would have to purchase the land from the owner at the rate determined by the Land Acquisition and Rehabilitation Act 2012, after subtracting the tenancy price paid to the company. Let us assume that a particular farmer had invested 10 hectares of his land to incorporate ABC Farms and all of the incorporated land was acquired. The market value of the 10 hectares is about INR 6 crore. So, he would get INR 4.5 crore, and he would continue to hold the shares and his job in ABC Farms, though his land has been acquired. It increases the time duration for acquiring the land, but it provides social protection to the owners of the land. It also ensures continuity of employment and equity in the company for the farmer whose land has been acquired. It also prevents an outright displacement of the farmer from both his land and livelihood. It has obvious psychological benefits for the farmer and his family.

Research Implications

The present paper brings out the flaws in the current model of agricultural financing in India. It provides an alternative policy for the agriculture markets in India that encourages private investment. It provides actionable steps that could be implemented as a policy prescription. The research highlights the need for a course correction, and it may encourage policy makers to make decisive changes. It may reduce the state intervention in the sector leading to higher growth.

Conclusion

Institutionalizing the process of agriculture in India and providing it with debt free capital could be the reforms that would help eliminate rural poverty through a real rise in productivity. It will bring it mechanization and lead to specialization of labour. It will also lead to creation of new jobs that would attract new skills and talent to agriculture. These structural reforms would bring in market efficiency into the sector and enable the withdrawal of state intervention from the sector. It recognizes the property rights of farmers and provides them protection from the market, nature, and the society. It spurs entrepreneurship and creates an incentive for growth. It is also a step of organizing, what may well be the largest unorganized sector in the world.

The method of structural reforms is based on the principles of social mobilization and proactive citizenship. It is aligned to the philosophy and working methods of current rural development and poverty alleviation programs. So, it is possible to implement structural reforms on a large scale basis in India within the existing framework of governance. All sectors of the Indian economy have undergone considerable reforms since the mid-1980s. However, the agricultural sector has largely been left untouched by successive governments. Most steps have been short term aid, which cannot sustain itself without state intervention. These reforms in the agricultural sector would have an impact beyond the sector and benefit the entire economy.

Limitations of the Study and Scope for Further Research

The agriculture sector in India is large and is marked by several variations at different levels. The paper has tried to capture the essence of the sector, but has not been able to study individual facets of the sector- staple crops, horticulture, and so forth. It has not been able to analyze different factors such as distance that affects agro-pricing.

It has also not dwelt into the institutions in the farm sector. Further research could be carried out to make predictive analysis of the implication of using the policy in different divisions of the agriculture sector. The impact could also be analyzed with regard to different players in the sectors.

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