



Challenges and Opportunities of small farmers in India

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Abstract

This paper examines the roles and challenges of small holding agriculture in India. It covers trends in agricultural growth, cultivation patterns, participation of small holding agriculture, productivity performance of small holders, linking small holders with markets including value chains, role of small holders in enhancing food security and employment generation, differential policies and institutional support for small holders and, challenges and future options for small holding agriculture including information needs. It also provides lessons from the experience of India on small holding agriculture for other countries.

Keywords: *Small and marginal farmers, food security, livelihoods, value chains, institutions*

I. Introduction

Small holdings agriculture which is the focus of this paper is important for raising agriculture growth, food security and livelihoods in India. It may be noted that Indian agriculture is the home of small and marginal farmers (80%). Therefore, the future of sustainable agriculture growth and food security in India depends on the performance of small and marginal farmers. Agricultural Census data shows that there were about 121 million agricultural holdings in India in 2000-01. Around 99 million were small and marginal farmers. Average size has declined from 2.3 ha. In 1990-91 to 1.37 ha. In 2010-11. Small and marginal farmers account for more than 80% of total farm hrs. But their share in operated area is around 44%. Thus, there are significant land inequalities in India.

The role of small farms in development and poverty reduction is well recognized. The global experience of growth and poverty reduction shows that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside agriculture. Small holdings play important role in raising agricultural development and poverty reduction. The highest growth rate of GDP from agriculture and allied activities of 23.9 per cent per annum in recent years was recorded in the period 2002-03 to 2010-11 . If we look at decadal average 1980s recorded the highest growth rate of more than 3 per cent per annum. In the post-reform period, it declined to 2.76 per cent per annum. The deceleration in the growth rate of GDP from agriculture between the first half of the 1990s and the later period is glaring. It is disquieting to note that during the 2007-08 to 2014-15, agriculture growth was only 1.6 per



cent per annum. Fortunately, it recorded growth of 3.5 per cent per annum during 2004-05 to 2010-11. 12th Five Year Plan (2012-17) aims to achieve 4% growth in agriculture. It may be noted that agriculture is a 'state subject' under the Constitution of India. However, the central government plays a crucial role in shaping agricultural policies. Although Indian agriculture is in private hands, government policies have greatly influenced its pace and character.

Trade liberalization in agriculture has been faster towards the end of the 1990s in tune with WTO agreements. There has been considerable progress in the liberalization of export controls, and quantitative controls on imports and on decontrol of domestic trade. The 11th Five Year Plan focused on 'faster and inclusive growth'. An important aspect of 'inclusive growth' in the 11th Plan is its target of 4 per cent per annum growth in GDP from agriculture and allied sectors. A detailed agenda for action is spelt out in Mid-term appraisal of 11th Five Year Plan covering improved access to water, improvement in the supply of good quality seeds, replenishment of soil nutrients, improvements in agricultural research and extension, reforms in land tenancy and improvements in agricultural marketing which is particularly important for perishable produce. The 12th Five Year Plan is going to focus on small and marginal farmers and resource poor regions.

II. Role of Small Holding Agriculture

1. Structure of land holdings: India is a land of small farmers. According to Agricultural Census 2000-01, there were

an estimated 98 million small and marginal holdings out of around 120 million total land households in the country. As shown in Table 3, the share of marginal and small farmers accounted for around 81% of operational holdings in 2002-03 as compared to about 62% in 1960-61. Similarly, the area operated by small and marginal farmers has increased from about 29% to 64% during the same period. Recent data for 2012-13 shows that the share of small and marginal farmers in land holdings was 83%. Thus, the small holding character of Indian agriculture is much more prominent today than even before. The average size of holdings in India declined from 1.33 ha. in 2001-02 to 0.33 ha. in 2012-13. It may be noted that 63% of land holdings belong to marginal farmers with less than 1 ha. The average size of marginal holdings is only 0.24 at all India level. The average size of small holdings is 1.42 ha. The average size of marginal holdings varies from 0.14 ha. in Kerala to 0.63 ha in Punjab.

2. Access to Irrigation: The access to irrigation has increased for all categories of farmers. It is the highest for marginal farmers followed by small farmers. The percentage of area under irrigation for small farmers increased from 51 in 2001-02 to 71 in 2012-13. On the other hand, for large farmers it rose from 16 to 31% during the same period. It may, however, be noted that large farmers capitalize on cheaper sources like canals while small farmers have to rent water. About 40 per cent of the irrigated area for large farmers was from canals while it was less than 25 per cent in the case of small and marginal farmers.



3. Access to Fertilizers and Area under HYV: The fertilizer per hectare is inversely related to farm size for both irrigated and unirrigated areas. It increased from marginal farmers in irrigated areas from 252 kgs. in 2001-02 to 552 kgs. in 2012-13. In fact, the per hectare consumption for all farm sizes was similar on irrigated areas in 2001-02 but it rose faster for marginal farmers and small farmers in 2012-13. This is true in the case of unirrigated areas also.

Similarly, the percentage of area under high yielding varieties (HYV) is also inversely related to farm size. In the irrigated areas, the coverage of area under HYV was 89%, 86% and 78% respectively in marginal, small and large farmers in 2012-13. In the case of unirrigated areas, the coverage was above 50% for marginal, small and semi-medium but it was only 30% for large farmers in 2012-13.

4. Cropping Intensity: Multiple cropping index is higher for marginal and small farmers than that for medium and large farmers. For marginal farmers, cropping intensity increased from 139 in 2001-02 to 159 in 2012-13. In the case of large farmer, it rose from 121 to 146 during the same period. The differences across farm sizes persisted over time.

5. Cropping Patterns: Birthal et al (2011) provide four conclusions from these cropping patterns: (a) small and marginal farmers allocate larger proportion of their cultivated land to high value crops like fruits, and vegetables; (b) small and marginal farmers seem to have comparative advantage in growing vegetables than fruits because of quick returns in the former; (c) small and marginal farmers allocate larger proportion of rice and

wheat than other farmers; (d) small and marginal farmers allocate lower proportion of land to pulses and oilseeds.

6. Farm Size, output and productivity: The contribution to output is higher for marginal and small farmers as compared to their share in area. The share of these farmers was 46.1% in land possessed but they contribute 51.2% to the total output of the country at all India level in 2002-03. There are significant regional variations in their contribution to output. The share of output is less than the operated area in ten states. In rest of the states, the reverse was true. The contribution of small and marginal farmers to output ranges from 19% in Punjab to 86% in West Bengal. It is less than 50% in 9 out of 20 states. In the Eastern states, the share of both area and output are high for these farmers. On the other hand, in some of the states in Central, Western and North-Western regions, medium and large farmers still dominate in both area and output.

In terms of production, small and marginal farmers also make larger contribution to the production of high value crops. They contribute around 70% to the total production of vegetables, 55% to fruits against their share of 44% in land area (Birthal, 2011). Their share in cereal production is 52% and 69% in milk production. Thus, small farmers contribute to both diversification and food security. Only in the cases of pulses and oilseeds, their share is lower than other farmers.

III. Issues and Challenges for Small Holders

There are many issues and challenges for small holding agriculture in India. NSS Farmers' survey of 2003 brought



out many issues relating to small and marginal farmers. Based on this Survey, NCEUS says that "some of the general issues that confront marginal-small farmers as agriculturalists are: imperfect markets for inputs/product leading to smaller value realizations; absence of access to credit markets or imperfect credit markets leading to sub-optimal investment decisions or input applications; poor human resource base; smaller access to suitable extension services restricting suitable decisions regarding cultivation practices and technological know-how; poorer access to 'public goods' such as public irrigation, command area development, electricity grids; greater negative externalities from poor quality land and water management, etc". This sub-section discusses some of the key issues and challenges relating to small holding agriculture.

Role of women: The importance of women in agriculture has been increasing. The share of rural females in agriculture was around 83 per cent in 2010-11 as compared to 67% among rural men, showing the importance of women in agriculture in rural areas. Percentage of women among marginal farmers (48.7%) is higher than that for large farmers (44.5%) in 2010-11. These proportions have increased over time. Agriculture is becoming increasingly feminized as men are migrating to rural non-farm sector.

Social Groups: The proportion of socially disadvantaged groups such as Scheduled Castes (SCs) and Scheduled Tribes (STs) is higher among marginal and small farmers than that of medium and large farmers. The distribution of land ownership among STs is better than SCs. However, the quality of STs land is probably of the lowest quality.

Social identity of farmers is also seen to mediate access to economic resources and outcomes. Even after accounting for quantity and quality of land owned by socially deprived classes, their access to information, marketing, credit and publicly provided inputs and extension services are lower. This shows that they possibly suffer from discrimination in the delivery of public services as well as market.

Land Issues: Land and tenancy security: National Commission on Enterprises for Unorganized Sector argued that there is a strong evidence that relatively successful implementation of even a modest package of land reforms dramatically improve the prospect of the poor. Regarding small and marginal farmers, they own and cultivate some land but it is a limiting factor for getting resources. Therefore, tenancy security is important for small holding farmers

Low level of formal education and skills: Education and skills are important for improving farming practices, investment and productivity. It shows that literacy and mean years of education are lower for small holding farmers compared to medium and large farmers. For example, literacy among males and females for marginal farmers respectively were 62.5% and 31.2% while the corresponding numbers for medium and large farmers were 72.9% and 39% . Similarly, mean years of education for males among marginal farmers were 3.9 as compared to 5.3 for medium and large farmers. It is important for small holding farmers to have a reasonable level of awareness regarding information on agriculture. The low level of farmers' education limits public dissemination of knowledge. The NSS farmers' Survey



clearly shows that awareness about bio-fertilizers, minimum support prices and WTO is associated with education levels which are lower for marginal and small farmers.

Credit and Indebtedness: Small holdings need credit for both consumption and investment purposes. Increasing indebtedness is one of the reasons for indebtedness among these farmers in recent years. However, the indebtedness for the small & marginal farmers from formal institutional sources is lower than large farmers and the reverse is true in the case of informal sources. The dependence on money lenders is the highest for sub-marginal and marginal farmers. The share of formal source varies from 38.6% to 76% for small and marginal farmers while it varies from 65 to 68% for medium to large farmers. Dependence of small and marginal farmers on informal sources is high even in states like Andhra Pradesh, Punjab and Tamil Nadu. For example, small and marginal farmers of Andhra Pradesh have to depend on 67% to 73% of their loans on informal sources. This indicates very low financial inclusion for Andhra Pradesh. The NSS data also shows that across social groups, the indebtedness through formal sources is lower for STs as compared to others.

Globalization challenges: Increasing globalization has added to the problems faced by the small holding agriculture. The policies of huge subsidies and protection policies by developed countries have negative effects on small holding farmers in developing countries. If support is not given to small farms, globalization may become advantageous for large farms. There has been adverse impact of trade liberalization on the

agricultural economy of the region's growing crops such as plantation, cotton and oil seeds in which foreign trade is important. With liberalization, the issue of efficiency has become highly relevant as domestic production has to compete with products of other countries. In the recent years domestic prices of several agricultural commodities have turned higher than international prices. India is not able to check import of a large number of commodities even at high tariff. This is true not only in the case of import from developed countries where agriculture is highly subsidized but also in the case of products from developing countries.

Impact of climate change: Climate change is a major challenge for agriculture, food security and rural livelihoods for millions of people including the poor in India. Adverse impact will be more on small holding farmers. Climate change is expected to have adverse impact on the living conditions of farmers, fishers and forest-dependent people who are already vulnerable and food insecure. Rural communities, particularly those living in already fragile environments, face an immediate and ever-growing risk of increased crop failure, loss of livestock, and reduced availability of marine, aquaculture and forest products.

Water problems: Water is the leading input in agriculture. Development of irrigation and water management are crucial for raising levels of living in rural areas. Agriculture has to compete for water with urbanization, drinking water and industrialization. As mentioned above, small holding agriculture depend more on ground water compared to large farmers who has more access on canal water. Ground



water is depleting in many areas of India. Marginal and small farmers are going to face more problems regarding water in future. Therefore, water management is going to be crucial for these farmers .

Diversification: There has been diversification of Indian diets away from food grains to high value products like milk and meat products and vegetables and fruits. The increasing middle-class due to rapid urbanization, increasing per-capita income, increased participation of women in urban jobs and impact of globalization has been largely responsible for the diet diversification in India. Hi-value products have caught the fancy of the expanding middle class and the result is visible in the growing demand for hi-value processed products. There is growing demand for non-food grain items in India. The expenditure elasticity for non-cereal food items is still quite high in India. It is thrice as high when compared to cereals in the rural areas and over ten times as high in urban areas.

Risk and vulnerability: There is enough evidence to suggest that poor and poorest of the poor households are vulnerable to a range of risks affecting individuals, households or whole communities which can have a devastating effect on their livelihoods and well being. They have higher exposure to a variety of risks at individual or household level. Some of them are (a) health shocks: illness, injury, accidents, disability; (b) labour market risk: many work in informal sector and have high risk of unemployment and underemployment; (c) harvest risks, life cycle risks, social risk and special risks for vulnerable groups. The present major schemes for

the poor in India fall into four broad categories: (i) food transfer like public distribution system (PDS) and supplementary nutrition (ii) self employment (iii) wage employment and (iv) social security programmes for unorganized workers. The effectiveness of these programmes have to be improved so that small and marginal farmers can also benefit from these programmes. Crop insurance programmes and future markets have to be strengthened to reduce risks in price and yields

IV. Opportunities for Small Holding Agriculture

There are many technological and institutional innovations which can enable marginal and small farmers to raise agricultural productivity and increase incomes through diversification and high value agriculture.

Research and Extension

The yield growth for many crops has declined in the 1990s. Technology plays an important role in improving the yields. The National Commission on Farmers also indicates that there is a large knowledge gap between the yields in research stations and actual yields in farmers' fields. There seems to be a technology fatigue in Indian agriculture.

Technological Innovations

It may be noted that agricultural technologies are 'scale neutral' but not 'resource neutral' . Small holder-oriented research and extension should give importance to cost reduction without reduction in yields. Therefore, new technological innovations are needed. "These include low external input and sustainable agriculture approaches based on ecological principles but without the use of artificial chemical fertilizers, pesticides



or agro-ecological principles but without the use of artificial chemical fertilizers, pesticides, or genetically modified organisms; and biotechnology”

Institutional Innovations

Small holding agriculture faces many challenges. But, a number of innovative institutional models are emerging and there are many opportunities for small and marginal farmers in India. Institutions relating to (a) land and water management, (b) group or cooperative approach for inputs and marketing and, (c) value chains and super markets can enhance productivity, sustainability and incomes of small holding agriculture.

(a) Women's collectives: Women's cooperatives, producer women's groups and other forms of group efforts, where they do not already exist, should be promoted to overcome constraints of small and uneconomic land holdings, for the dissemination of agricultural technology and other inputs, as well as for marketing of produce. There has also been greater emphasis on women's collectives. An initiative in Andhra Pradesh based on the Self Help Group (SHG) provides another example of an institutional platform for agriculture. The Community Managed Sustainable Agriculture (CMSA) programme was initiated by the Society for Elimination of Rural Poverty (SERP) in Andhra Pradesh in 2004. The mandate of the program is to eradicate poverty and to improve livelihoods of the poor.

(b) Institutions for Marketing of Small Holdings

For small and marginal farmers, marketing of their products is main problem apart from credit and extension. In recent years, there has

been some form of contract arrangements in several agricultural crops such as tomatoes, potatoes, chillies, gherkin, baby corn, rose, onions, cotton, wheat, basmati rice, groundnut, flowers, and medicinal plants. There is a silent revolution in institutions regarding non-cereal foods. New production –market linkages in the food supply chain are: spot or open market transactions, agricultural co-operatives and contract farming. Most important problem for the small farmers is output price fluctuations. There is a big gap between producer prices and consumer prices. There are different models for marketing collectively by the small and marginal farmers. These are: self help group model, co-operative model, small producer co-operatives and contract farming. *Apni Mandi* in Punjab, *Rytu Bazars* in Andhra Pradesh, dairy co-operatives are some of the successful cases in marketing. The real challenge lies in organising the small and marginal farmers for marketing and linking them to high value agriculture. Thus, group approach is needed for getting benefits from marketing.

Conclusion:

In India, the expansion of modern retailing has the potential to spark investment in marketing efficiency and processing that yields benefits to both producers and consumers. In those cases

where small producers have been able to integrate into the supplying chains, supermarkets have offered enhanced security and considerably higher margins than the traditional clients, such as wholesales and groceries. However, there is scope for exploitation



in contract farming and super markets if rules are not framed properly.

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