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Int. J. Agriworld, Vol. 4[1] January 2023 ©2020 SVPSS, India Online ISSN: 2582-7537 Journal's <u>URL:http://www.svpss.in/ijaw</u>

DOI: https://doi.org/10.51470/IJAW.2023.04.01.19

Received 14.01.2023

REVIEW ARTICLE

Revised 15.02.2023

Accepted 18.03.2023
OPEN ACCESS

The Role of Small and Marginal Farmers in Securing Sustainable Food Security in Bihar and West Bengal: A Comparative Study

Gopal Chandra Roy

University Department of Rural Economics & Co-operation, Tilka Manjhi Bhagalpur University. India

* Corresponding Email: <u>we1gcroy@gmail.com</u>

Abstract

Agriculture remains the fundamental pillar of the Indian economy and a significant revenue generator for rural households, predominantly comprising small and marginal producers who additionally ensure food and nutrition security. Indian farmers encounter a multitude of challenges pertaining to financing, input accessibility, effective market integration, and additional concerns. The adoption of labor-saving technologies by female farmers is inadequate, consequently impacting the nutritional status and overall welfare of farmer households. The agriculture sector of India has made a special contribution to job as well as food security. As more than half of the citizens of the nation rely on it for their daily sustenance, poverty has decreased. This industry makes a particularly noteworthy contribution to the availability of fruits, vegetables, spices and cereal grains. The national policies that include everything from yield to total profitability for farmers along with food security through nutrition security are the main subject of the current study.

Keywords: Agriculture, Small and marginal farmer, Land holding, Sustainable employment, Food security *etc*. **Introduction** agricultural sector. The net farm income as well as net

Agriculture serves as the fundamental basis for overall development in the majority of countries where it is the primary occupation of the rural populace. Indian subcontinent is one of the agriculture dependent regions of the globe. Ecological and environmental scenario of India is favorable for cultivation of various crops. As a result of the agricultural revolution, natural ecosystems have been transformed into new forms to suit human needs (Das et al., 2022). However large scale agriculture is affected by rapid urbanization and industrialization (Bhagat, 2011). Large scale agricultural sector is also affected by weeds (Sarkar et al., 2017; Das et al., 2018) and for deweeding it needs more time and more labour. Maintenance of large sector is also difficult sometimes for socioeconomic aspects. As per the need some farmers shift their status as small and marginal farmers. Some people are also start to utilize homeyard gardens, which not only secure food supply but also improve lively hood (Jaman et al., 2022). In order to alleviate poverty and provide food security, it is imperative for these nations to strengthen their agricultural sector. The net farm income as well as net profit was primarily the result of price premium per unit of production (Barman and Roy, 2023). Since few decades the production of food grains, fruits, and vegetables reach a remarkable spot due to technological advancement, skill improvement and farmer friendly policy implement (Roy, 2022). Inspite of these Indian farmers encounter a multitude of challenges pertaining to financing, input accessibility, effective market integration, and additional concerns (Vatta and Budhiraja, 2020). Implementing diverse social programmes can enhance the social status of farmers and contribute to the betterment of marginalized communities (Chandrakar et al., 2021). There is a significant need to evaluate national policies that address a wide range of issues, such as agricultural output, farmer profitability, availability of food, and ensuring adequate nutrition. It would facilitate comprehension of how vital sustainable agriculture is to guaranteeing food security in India. In order to effectively address hunger and extreme poverty in these nations, it is imperative for smallscale farming to enhance its competitiveness, as stated

in the World Development Report of 2008 (World Bank 2008; Oya, 2009). Small agricultural holdings constitute the vast bulk of farms across plenty of developing nations (FAO, 2010). The analysis of data from the World Programmed Census of Agriculture 2000 has revealed that the Asia and Pacific area has the highest prevalence of small-scale land holdings on a worldwide scale. Estimates suggest that Asia and the Pacific region include approximately 87 percent of the 500 million farms worldwide (Hazell et al., 2007; Hazell et al., 2010). To underscore the significance of small and marginal farmers in the agricultural domain of developing countries, the present study juxtaposes and contrasts key attributes of marginal farmers in West Bengal and Bihar with those observed at the national level. These attributes consist of the average size of marginal farms within the Indian states, the quantity of holdings, and the functioning area.

Indian Scenario

Agriculture remains the fundamental pillar of the Indian economy and a significant revenue generator for rural households, predominantly comprising small and marginal producers who additionally ensure food and nutrition security (Chandrakar et al., 2021). The population growth and demographic factors in the region where existing holdings are situated have contributed to a gradual increase in the number of marginal farmers. Between 2000-01 and 2010-11, there was a significant increase in the number of holdings over the entire country. Furthermore, it has been demonstrated that during this period, there has been a decrease in the average size of holdings across all categories (Chandrakar et al., 2021). From 2000-01 to 2005-06, the usual size among all size classes decreased from 1.33 hectares to 1.22 hectares, and eventually from 2010–11, it dropped to 1.15 hectares. Preservation of agricultural viability and food security is contingent upon their indispensability. Considering this scenario, the subsequent section will examine the ratio of land holdings, operational area, and average land holding size of small-scale farms in major Indian states. During 2000-2001 as well as 2010-2011, there was a nationwide reduction in the average agricultural holdings of small-scale farmers, from 0.40 hectare to 0.38 hectare. The agricultural sector in India has made specific contributions to both the domains of nutritional well-being as well as guarantee of employment. It contributes to poverty reduction by ensuring a livelihood for over 50% of the people in the nation. Their relative contributions to the availability of food grains, vegetables, spices, and

fruits stand out, with production reaching roughly 265 and 280 million tonnes in the previous ten years.

Problems of Study:

The progress and advancement in the agricultural sector in India should not be disregarded, notwithstanding the sector's decline in its overall contribution to the GDP of the country. Nevertheless, notwithstanding this advancement, Indian small- and marginal farmers continue to encounter numerous challenges, encompassing both anthropogenic factors and environmental concerns.

Some of these issues include:

- Lack of access to institutional credit.
- High expenses for inputs.
- The lack of insurance protection for agricultural failure.
- Insufficient availability of water from irrigation and declining levels of groundwater.
- The lack of financial stability due to uncertainty.
- The absence of a supplementary source of income during periods of low demand, such as droughts, floods etc.

Study of the literature:

The Indian government has always aimed to increase farmers' income (Singh et al., 2018; Das et al., 2021). Smallholder farmers face numerous challenges, such as ensuring enough food production, maintaining the natural resource base, and improving employment and income levels. These challenges are further compounded by the impacts of climate change, including variances and shifts in weather patterns (Jose and Dollinger, 2019). In a study undertaken by Kulkarni et al., (2015), an aggregate of 4,881 users were assessed on the Mahatma Gandhi National Rural Employment Guarantee Schemes, which produced over 4,100 works. The recommendation put forth by the Working Group on Marginal Farmers suggests that there should be a protest against procurement from small as well as marginal farmers, with a specific focus on regulating multi-brand retail. One potential strategy to incentivize marginal farmers is to promote their participation in farmer producer originations (FPOS). These organizations offer two key benefits: interest subvention on loans for duration of five years and exemption from the agricultural product market committees (Gandhi, 2018; Chattopadhyay, 2022; Mahesh, 2022). Agricultural technology is independent of size but

not independent of resources, as pointed out by Singh et al., (2002). Small-scale farmers should be the major target of extension and research initiatives that emphasize cost reduction while retaining high yields. According to Chand (2011), agricultural holdings in India are predominantly characterized by small-scale farming. The Agricultural Census 2000-2001 estimated that 98 million of the 120 million farmland holders in the country had small and marginal holdings. Rani and Praveen (2008) assert that small-scale farmers exhibit greater susceptibility to crop production risk compared to area risk in the cultivation of crops such as maize, sunflower, peanut, and red gram. Small-scale land ownership has a crucial role in promoting growth in agriculture and alleviating poverty (Macharla and Lal, 2017). Rani and Praveen (2008) observed in their study that a decline in marketable surpluses for all agricultural crops indicates financial risk. It is their conviction that land leasing has demonstrated itself to be an indispensable instrument in augmenting the revenue of small to medium-sized producers and broadening their production base.

Aims of the research:

- i. To discuss how the idea came to be and what is happening now with small and marginal farms.
- ii. To understand and acknowledge the land rights of small and struggling farmers in India, including those in West Bengal and Bihar.
- iii. To define and evaluate the long-term employment as well as food supply for marginal and small-scale farmers in West Bengal, Bihar, and other parts of India.

Hypothesis:

- i. Government programmes and policies are effectively enhancing the quality of life for small-scale farmers.
- ii. The influence of marginal and small-scale farmers on agricultural output and sustained employment is significant.

Methodology

To conduct the study secondary data was gathered from relevant sources such as journals, books, reports, and other publications like Agricultural Census, Official documents, Farmer welfare related documents of the years 2000–01, 2005–06, 2010–11, and 2015–16. Some data were collected from similar studies and is used to supplement the primary data. Collected data was analyzed properly.

Result and Discussion:

Agriculture is the base of many developing countries like India. India generates sufficient revenue by exporting several crops towards a huge number of countries. Most of the regions of the country are suitable for cultivation due to its topography and climate. Among the Indian states West Bengal and Bihar are at the frontline. Indian agriculture is primarily characterized by smaller holdings, as indicated by the Agricultural Census and other surveys. Furthermore, the size of operational holdings has been declining to levels that are no longer profitable. In India, apart from Jharkhand, which has a significant tribal population, over 90% of operational holdings are small or insignificant. The average size of a farm ranges from 0.38 to 0.43 hectares. In Bihar as well as West Bengal, the typical size of farms ranges from 0.25 to 0.38 hectares, which is either equal to or much smaller to the national average of 0.38 hectares during the year 2015-16. In the budget year 1970-71, Bihar and West Bengal had scores that were below the national average of 0.4. It is worth noting that sharing crops and tenancy are prevalent arrangements observed in marginal and small holdings within the regions of West Bengal and Bihar. The typical size of farmland in these states is comparable to the national average, and it has exhibited a downward trend over time in both of these states. The large-scale category in West Bengal has an average size of farms that is almost four times larger than the marginal size group. It is noteworthy that the mean size of farms in the mentioned states was comparatively less than the national average. In the state of Bihar, there exists a notable disparity in the average land ownership among major landowners. Although there is variation across different states, the typical size of farms generally seems to fall within the medium-size range. The disparity in average farm size categories among the states can be mostly attributed to the disparities in typical farm size among the Marginal and Large size groups.

In Bihar marginal and small land holder correlation is 0.997 and statistically significant 0.003 in one percent level. In west Bengal marginal and small land holder correlation is 0.015 and statistically significant 0.985 in one percent level. In India marginal and small land holder correlation is 0.761 and statistically significant 0.239 in one percent level. In 2010-11, the proportion of small and marginal farmers contributing to output increased from 78.26% in Bihar and 90.89% in West Bengal, while the overall contribution of farmers in

India was just 57.78%. Many large-scale farmers engage in the cultivation of multiple crops, with a preference for high-value crops that need substantial financial investment and technological inputs. Research has indicated that the degree of cropping intensity plays a significant role in enhancing production and fostering agricultural expansion within the nation. Therefore, the increase in cropping intensity across various size categories, particularly among small and marginal land-holding categories, represents a positive and beneficial advancement.

Conclusion

Several factors can be linked to the decline in the cultivation of arable land in India after 1990. These factors encompass a significant rise in urban migration, a scarcity of agricultural workforce, intermittent fluctuations in trading conditions for agriculture, and the diminishing attractiveness of farming as a vocation. Research findings suggest that the level of cropping intensity significantly influences the overall growth of agricultural production within a country. Therefore, the increase in cropping intensity across all size categories, with a special emphasis on small and marginal land holding categories, represents a positive advancement. Although cropping has increased over time, research has shown that the intensity of cropping is negatively connected to the extent of land holdings. The annual mean farm size exhibits a level of similarity to or a significant disparity in comparison to the national average. The majority of tiny landholdings in Bihar and West Bengal are currently inhabited by tenants, primarily involved in sharecropping activities, a point that I would want to underscore in this context. The national strategy prioritizes the optimization of crop yield to improve overall agricultural productivity, while also emphasizing the significance of ensuring food security, nutrition security, and yield. This paper aims to highlight the importance of sustainable agriculture in ensuring India's food security in the face of global climate restrictions.

Forming policy

- i. Financial support is provided under the priority of the institution.
- ii. Subsidies to fuel, electricity, and other relevant substances specifically for drip irrigation systems that make use of groundwater.
- iii. Government support for soil testing; pest, and pathogen control; and crop report.
- iv. Training for sustainable agriculture and proper training.

- v. Guarantee for the cost of the agricultural products.
- vi. Support for agriculture and farm land related legal aspects.

REFERENCE

- Barman, P., and Roy, G.C.(2023). Impact on organic farming as well as its impact on sustainable Agriculture: A case study. In Roy, G.C. and Sarkar A.K. (Eds) Sustainable Development through Science, Agriculture and Social Reforms. Akinik Publication, New Delhi. 53-64.
- Bhagat, R.B. (2011). Emerging Pattern of Urbanisation in India. *Economic and Political Weekly*, 46(34): 10-12.
- Chand, R., Lakshmi, P.A. and Singh, A. (2011). Farm size and productivity; Understanding the strengths of smallholders and improving their. *Economic and Political Weekly*. 46 (26 and 27).
- Chandrakar, K., Chandrakar, D., and Das, D. (2021) Socio-economic survey of operational holding of farmers and status of small and marginal farmers in India. *International Journal of Home Science*. 7(1): 105-107.
- Chandramouli, C., and General, R. (2011). Census of India. *Provisional population Totals Paper*, *Series*, 1: 39-40.
- Chattopadhyay, P. (2022). Book review: Marginal Farmers of India. *Indian Journal of Public Administration*. 68(1), 130-133.https://doi.org/

10.1177/00195561211052110

- Das, B., Mandal, S., Sarkar, K., Mazumdar, I., Kundu, S., and Sarkar A.K. (2022). Contribution of Ethnic and Indigenous people in the Conservation of Plant Biodiversity in India. *Adv. Biores.* 13 (3):209-229.
- Das, B., Mazumder, M., Dey, M. and Sarkar A.K. (2018). Weed Composition in Rice Field Agroecosystem of Terai-Dooars and Northern Plain of West Bengal, India. *Int J Recent Sci Res.* 9(6): 27375-27381. DOI: http://dx.doi.org/10.24327/ijrsr.2018.0906.224 5

- Das, A., Datta, D., Samajdar, T., Idapuganti, R.G., Islam, M., Choudhury, B.U., Mohapatra, K.P., Layek, J., Babu, S., Yadav, G.S. (2021). Livelihood security of small holder farmers in eastern Himalayas, India: Pond based integrated farming system a sustainable approach. Current Research in Environmental Sustainability.3:100076.https://doi.org/10.1016 /j.crsust.2021.100076.
- District Census Handbook, Census of India. Government of India. 2001. Employment and Unemployment Situation in India 1999-2000 (Part I). Sixth Quinquennial Survey, NSS 55th Round (July 1999-June 2000), New Delhi.
- FAO. (2010). Asia and Pacific Commission on Agricultural Statistics, Agenda item 10, April. Government of India. 2001.
- Gandhi F.V. (2018). A Rural Manifesto: Realizing India's Future Through Her Villages. *Rupa Publications, India*.
- Government of India. 2003 & 2013. Situation Assessment Survey of Formers. NSS 59th and 70th Round, NSSO, Ministry of Statistics and Programmed Implementation. Government of India. 2004. Planning Commission. West Bengal State Development Report, Academic Foundation, New Delhi.
- Government of India. 2011. District Census Handbook, Census of India, Census of India Government of India, Agricultural Census, Agriculture Census Division, *Department of Agriculture, Cooperation & Farmers Welfare*, 2000-01, 2005-06 and 2010-11.
- Hazell, P., Colin, P., Steve W., and Andrew D.
 (2007). The Future of Small Farms for Poverty Reduction and Growth. 2020 Discussion Paper 42, Washington, DC: International Food Policy Research Institute.
- Hazell, P., Colin, P., Steve W., and Andrew D. (2010). The Future of Small Farms: Trajectories and Policy Priorities. *World Development*. 38(10):1349-1361.
- Jaman, A., Mazumdar, I. and Sarkar, A. K. (2022), Innovation and Sustainability through Urban Agroforestry and House yard Garden, *Int. J. Agriworld.* 3 (1): 1-11.

- Jose, S., and Dollinger, J. (2019). Silvopasture: a sustainable livestock production system. *Agrofor. Syst.*, 93:1-9. https://doi.org/10. 1007/s 10457-019-00366-8
- Kulkarni, A., Ranaware, K., Narayanan, S., Das U.
 (2015) MGNREGA works and their impacts: A Study of Maharashtra. *Economic & Political Weekly.* 50 (13): 53-61.
- Oya, C. (2009). The World Development Report 2008: inconsistencies, silences, and the myth of 'win-win' scenarios. *The Journal of Peasant Studies*. 36(3):593-601. <u>https://doi.org/10</u>. 1080/03066150903142949
- Rani, C.R. and P Praveena, P. (2008). 'Risk, Vulnerability and Farmers' Coping Mechanisms in Rainfed Agriculture: A Study in Karnataka. *The IUP Journal of Agricultural Economics.* (1):35-47.
- Roy, G.C. (2023). Impact on India's Sustainable Food Security for Small and Marginal Farmers, with a focus on Bihar and West Bengal. *ICRRD journal*. 3(3):122-128.
- Sarkar, A.K., Mazumder, M. and Dey, M. (2017) Weed species composition of Pineapple based cropping system in Northern Part of West Bengal, India. Adv. Biores. 8 (6):258-269.
- Singh, G.P., Sendhil, R., Kumar, A., Singh, S., Tripathi, S.C. (2018). 'Doubling farmers' income by 2022: pathway and strategies for wheat producers. *Indian Farming*. 68 (01): 24-26.
- Singh, R.B., Kumar, P., and Headwood, T. (2002). Smallholder Farmers in India: Food Security and Agricultural Policy. *Bangkok: FAO, Regional office for Asia and the Pacific.*
- Thapa, G. and Gaiha R.(2011). Smallholder farming in Asia and the Pacific: Challenges and Opportunities. Paper presented at the Conference on new directions for small holder agriculture, 24-25 January 2011, *Rome, IFAD*.
- Vatta, K., and Budhiraja P. (2020). Farmers' income in India: trends and prospects for future growth. Agricultural Economics Research Review. 33 (2): 177-189. <u>https://doi.org/10.595</u> 8/09740279.2020.00030.0

World Bank. (2008). World Development Report 2008: Agriculture for Development. https://doi.org/10.1596/978-0-8213-6807-7



Graph1: Average Size of Land Holdings by Size Classes (In hectares) Source: Ministry of Agriculture, All India Report on Agricultural Census, Government of India, New Delhi, Various Issues.

	Table 1: Average Size of Land Holdings by Size Classes (In hectares)													
	BIHAR					WEST BENGAL					INDIA			
	Margi		Semi-			Margina		Semi-			Margina		Semi-	
YEAR	nal	Small	Medium	Medium	Large	1	Small	Medium	Medium	Large	1	Small	Medium	Medium
1970-														
71	0.38	1.41	2.77	5.84	17.47	0.43	1.38	2.63	5.28	-	0.41	1.44	2.81	6.08
1990-														
91	0.35	1.36	2.73	5.65	16.41	0.44	1.53	2.78	5.39	-	0.39	1.44	2.76	5.90
2010-														
11	0.25	1.25	2.59	5.09	14.45	0.49	1.59	2.73	4.85	-	0.39	1.42	2.71	5.76

1.60

2.74

4.81

0.38

1.40

2.69

5.72

Table: 2. The comparison of Small and Marginal Farmers share in output.

0.38

14.48

State	2002-03	2010-11
	Share in output	Share in output
Bihar	69.2	78.26
West Bengal	83	90.89
All India	51.2	57.78

(Source: Ministry of Agriculture, Agriculture census at a glance, 2014).

2015

16

0.25

1.25

2.60

5.29

Large

18.10

17.33

17.38

17.08



Graph 2: Comparison of Small and Marginal Farmers share in output

CITATION OF THIS ARTICLE

Roy, G. C. (2023). The Role of Small and Marginal Farmers in Securing Sustainable Food Security in Bihar and West Bengal: A Comparative Study, *Int. J. Agriworld*, 4 [1]: 19-25.