ABSTRACT

Livelihood diversification is a process by which rural households construct a diverse portfolio of activities and social support capabilities in their way for survival and improvement in their standards of living. Further, in order to provide alternative employment opportunities to rural farm households in developing countries, the promotion of non-farm activities and livelihood diversification has received increased policy attention recently. The interest among researchers is rising to analyze the wider implications for household livelihoods and rural development in different agroecological zones due to growing importance of non-farm economic activities. In this dissertation, the impact of non-farm livelihood diversification on farm household's income, consumption expenditure, dietary and expenditure diversities, farm investment and poverty are analyzed in rural India. The analyses build on a longitudinal data (IHDS 2004-05 and 2011-12) of those households whose primary source of income is cultivation and residing in rural areas. This is done within the scope of seven different chapters. The first chapter discusses the importance of farm households for Indian rural economy, different sources of income and the challenges farm household faces, livelihood diversification as a strategy for household well-being. Further, first chapter also discusses the research gaps which leads to the specific objectives and research questions of the thesis, along with the significance of the study.

In the second chapter entitled "Determinants and Effects of Livelihood Diversification in Rural Non-Farm Enterprises". The chapter makes an attempt to examine empirically the determinants of livelihood diversification of rural farm households in non-farm enterprises (NFEs) and its possible impact on their income and consumption expenditure in different agroecological zones of rural India. For this purpose, the chapter applied panel probit analysis and propensity score matching (PSM) techniques by using longitudinal farm household's data from the Indian Human Development Survey (IHDS) conducted in 2004-05 and 2011-12. It was found that decision relating to NFE diversification significantly depends on the farm and

household characteristics such as dependency ratio, membership of the cooperative association, credit access and household size etc. The households in the humid zone will engage in NFE activities more than those in semi-arid tropical and arid zones. The households to diversify their income portfolio towards non-farm activities are mostly those having small landholding, low agricultural productivity, and surplus labor force. The non-farm income sources are accessible to a small proportion of farm households and have an un-equalizing effect on income distribution. Further, the results from propensity score matching (PSM) technique indicates that the diversification in NFE has a significant and positive effect on their farm income as well as on consumption expenditure. Further due to growing urban sprawl, it has positive implications for the rural economy by providing closer markets, better transportation services, awareness, and better rural-urban linkages. Hence it is recommended that rural NFE diversification among farm household is acting as a better mean of smoothing income and consumption.

The third chapter is entitled "Impact of Livelihood Diversification and Institutional Credit on Household Well-Being". This chapter examined the impact of livelihood diversification and accessibility to institutional credit on the monthly percapita consumption expenditure (MPCE) of households. The data provided information about 42,152 households, and our study focused on only the households that had taken a loan from any source, thus reducing the sample size to 22,630 households. The estimate suggested that, if a household had taken a loan from a formal source, then it was likely to have a higher MPCE by approximately 24.68 percent on average. The study also found that households whose main source of income belonged to the secondary sector had a negative and insignificant coefficient while the coefficient of the tertiary sector suggested that they had about a 29 percent higher MPCE compared to those households who belonged to the primary sector. The results also suggested that Hindus had a higher consumption compared to Muslims. However, Christians and Sikhs had about 36 percent and 23 percent higher consumption, respectively, than

Hindus. The study also found that households belong to lower social groups (OBC, SC, and ST) had lower consumption compared to households that belonged to the general category of the caste system. This chapter contributes to the existing literature on livelihood diversification, institutional credit, and household well-being in India. The findings provide insights into how accessibility to formal credit sources plays a vital role in increasingly engaging households in diversifying their livelihood in non-farm enterprises. This has significant policy implications for livelihood diversification and household wellbeing.

The fourth chapter is entitled "Impact of Non-Farm Enterprises Income on Dietary Diversity, Expenditure Diversity, and Farm Investment". This chapter contributes to the literature by investigating whether additional income obtained from rural non-farm enterprises (NFEs) help farm households in enhancing their dietary and expenditure diversity. Additionally, it also investigates the impact of NFEs income on farm investment to comprehend how NFEs income competes or complements with agricultural production activities. We discuss the theoretical conditions where access to NFEs income may affect farm investment, dietary and expenditure diversity in a farm household model followed by panel data analysis. The issue of potential endogeneity associated with NFEs income is overcome by using over-identified instrumental variable strategy. Socio-economic and demographic factors, agroecological zones, and household structures are included in the models as control variables. The study found that NFEs income significantly increased the food intake in general and it also helps farm households to shift from less nutritional to high nutritional foods which contribute to greater household dietary diversity, and, it also raises expenditure on non-food items and durable household assets, resulting in greater household expenditure diversity. In addition, we have also observed that NFEs income has a positive impact on farm investment which contributes to reform farm sector. Findings provide insights into how farm households increasingly engage in rural non-farm enterprises. This has significant policy implications for livelihood diversification and diversification in consumption expenditures, particularly for marginal and small farm households.

The fifth chapter is entitled "Livelihood Diversification in Non-Farm Enterprises and its Impact on Unidimensional Poverty Status of Farm Households". The study examined that the impact of livelihood diversification of farm households in non-farm enterprises (NFEs) on their unidimensional poverty status, escaping from poverty, and falling into poverty. Our estimates reveal that livelihood diversification in non-farm enterprises prevent farm households from falling into poverty, and help them to escape out of poverty. The results also indicates that NN (who did not diversified in 2004-05 and 2011-12), NY (who diversified in 2011-12 but not in 2004-05), and YN (who diversified in 2004-05 but not in 2011-12) had 4.1 percent, 16.6 percent, and 24.5 percent lower odds of escaping poverty compared to those farm households that diversified their livelihood in non-farm enterprises in 2004-05 as well as in 2011-12 (YY). However, the results of whether previously non-poor households fell in poverty or not that livelihood diversification status of NN (who did not diversify in 2004-05 and 2011-12), and YN (who did diversify in 2004-05 but not in 2011-12) had 28 percent, and 44.7 percent higher chances of falling into poverty than those farm households who diversified their livelihood in 2004-05 as well as in 2011-12. The results of control factors like religion, caste, education of household head, land holding, livestock ownership, quintiles of income and consumption represents consistent coefficients which reveals robustness concerning the impact of control factors on outcome variables.

The sixth chapter is entitled "Dynamics and Determinants of Multidimensional Poverty Status of Farm Households". This chapter intended to analyze the dynamics, prevalence and determining factors of both unidimensional and multidimensional poverty among farm households in rural India. The unique contributions of this chapter are to work on same households and individuals over time which helped us to control heterogeneity, decomposition of both poverty measures, and provide estimates at different sub-group levels.

Our estimates show the significant reduction in both poverty measures which confirm that poverty is mainly transient among farm households in rural India. Further, the study found a moderate reduction in rural poverty among farm households, and each of its dimensions and indicators, however, the reduction has not been uniformed across sub-groups. Also, it was found that unidimensional poverty significantly matters for multidimensional poverty and vice versa in terms of determining the poverty dynamics. Other control variable shows indifferent effect over poverty measures; for example, caste and household size are found to affect unidimensional poverty significantly not multidimensional poverty. This implies that these factor plays an important role to reflect on unidimensional poverty in short-term while the effect of education level of household head exhibits significantly on multidimensional poverty. Overall, using both measures as complementary to each other, and this study suggests that a decent rate of Indian economic growth has a more instantaneous influence on unidimensional poverty than on multidimensional poverty. Hence, target-based interventions in the field of schooling, nutrition, and better accessibility to water and sanitation sources are required to reduce multidimensional poverty.

The seventh chapter outlined the conclusions and the policy implications which urged to enhance marginal and small farm households' access to non-farm activities to support equitable rural development, since farming alone often cannot sustain a sufficient livelihood. This requires improvements in the physical infrastructure, including roads, electricity, water, and telecommunication, but also improvements in rural education and financial markets. But up to what level is livelihood diversification desirable? According to economic theory, specialization allows exploitation of comparative advantages and economies of scale, resulting in higher profits and household incomes. Hence, when markets function properly, diversification is associated with foregone benefits. When there is risk involved and formal insurance markets fail, these foregone benefits can be considered as an informal insurance fee that poor farm households in particular are willing to pay. But the fact that richer farm households are more diversified in rural India suggests that there are other mechanisms at work, too. An important motive for richer farm households to have highly diversified income sources instead of specializing more is that there are limited opportunities to expand single economic activities. This is mainly due to markets that are small and poorly integrated in rural India, which again is largely a function of infrastructure weaknesses. Better roads, for instance, would enable villagers to commute to the next bigger town, where they might find more stable employment. Better roads and information networks would also improve marketing opportunities for food and non-food products originating from non-farm enterprises. Therefore, livelihood diversification should not be considered as a policy objective per se. Rather, it has to be understood as a household response to various market imperfections. Hence, the policy objective should be to reduce these imperfections and make markets work better. While this would facilitate livelihood diversification among the poorest, it would probably promote a higher degree of specialization among relatively richer farm households.

Keywords: Livelihood Diversification, Non-Farm Enterprises, Credit Sources, Credit Purposes, Farm Income, Consumption Expenditure, Dietary Diversity, Expenditure Diversity, Farm Investment, Unidimensional Poverty, Multidimensional Poverty, Panel Data Analysis, Propensity Score Matching, Instrumental Variable Estimations; Agroecological Zones, Rural India

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