

Livelihood Sustainability

Subjects: Social Issues

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Livelihood sustainability means many farmers worldwide resort to choosing various income-earning options for diversifying their income sources as a means of risk-avoidance, social protection, and, above all, to finance agricultural operations. Non-farm income generation among farm families has become an imperative part of livelihood earning strategies in recent years amid fast-evolving climatic and sociodemographic changes.

Keywords: adaptation ; sustainability ; community support ; business ; start-up ; profitability ; constraints

1. Introduction

Declining per capita arable land and water availability as a result of the rapidly increasing population in most parts of the world are the main dilemmas for agrarian economies, including Pakistan ^{[1][2]}. Other anthropogenic and institutional drivers also cause an unstable and inconsistent flow of farm incomes, such as droughts, floods, marketing uncertainties, price fluctuations, and incoherent policy environment ^[3]. Farmers in developed countries also face uncertainty of farm income flows and are tempted to pursue various measures to secure and ensure the uninterrupted flow of income whether through farm-level diversification or off-farm diversification; this includes engaging in part-time businesses, providing labour to other industries or opting to pursue part-time/full-time service employment ^{[4][5][6][7]}. Such options pave the way for income sustainability among farm families while enabling them to easily and timely finance farm operations. Farmers in Pakistan also face similar issues, along with uncertain policy support, weaker institutional frameworks, higher incidence of crop and livestock disease, rampant pest infestation, higher vulnerability to catastrophic risk, poor resilience and coping capacity, and staggered mode of climate change adaptation ^{[8][9][10]}. All these factors place intense pressure on farmers to seek alternative options of income sources other than agriculture.

One must be well-aware and proactive to respond to any risk/risk source to which his/her livelihood is exposed by developing a feasible risk management strategy, for example, pursuing and resorting to non-farm income sources in the case of the farming businesses. Economic motives, as well as the pressure of other risk sources, generally results in persuading the majority of agricultural households to explore other means of generating additional income through non-farm activities to potentially face the issue of income variability and the risk of farm income decline ^[11]. In Pakistan, non-farm activities have become a vital element of income generation strategies among agricultural households with the possibility of increasing their share of non-farm income to total farm income as evinced by ^[12] and ^[13], who note that the share of non-farm income in total household income may increase with the passage of time in many developing countries. These activities are also linked with poverty reduction in rural areas ^[12].

Due to population growth and the uncertain nature of farming, households are pushed towards non-farm activities leading to “distress-push” diversification; this is not the only case as some agricultural households are compelled into non-farm sectors because of higher earnings from off-farm employment. The latter has fewer risk elements than agriculture, resulting in a “demand-pull” diversification ^[14]. Some studies tacitly accept that the “distress-push” factor is more prevalent due to a declining per capita land availability, thus forcing farm families to pursue non-farm activities ^[15].

2. Dynamics of Non-Farm Income Diversification

The non-farm sector comprises all non-farm activities that are not directly linked to farm production operations but rather have links to various off-farm enterprises within rural as well as urban and peri-urban areas ^[13]. These strategies also serve as a method of self-insurance among agricultural households to stabilise their total household income ^[16]. Generally, the income of agricultural households is a combination of income from farm and non-farm sources. The decline in farm income due to a significant number of farmers (or members of farm families) searching for non-farm employment has increased not only in developing countries but also in developed countries. For example, the Economic Research Service (ERS) data show that income from non-farm sources has become the leading component of farm household income in USA ^[17].

In the case of the Netherlands, data from 60,000 respondents in ^[18] show that nearly 40% and 60% of agricultural households received earnings from off-farm services, respectively. Additionally, the sharing of income from off-farm employment gradually rose up to 15% from 2001 to 2013 ^[19]. Barret et al. ^[20] show that farmers always try to adopt a range of income sources in which non-farm sources have a leading share. This phenomenon has deeper roots in developing countries, as noted by ^[21] who discovered that 35–50% of rural farmers' total income comes from non-farm employment, which is anticipated to increase rapidly with the passage of time. These countries share the common issue of an increasing population with stagnant farming sources ^[11]. In the case of Ghana, ^[22] indicated that approximately 74% of farmers were engaged in non-farm income generation streams, whereas ^[23] noted that approximately 75% of agricultural households were involved in off-farm employment opportunities in Taiwan.

Literature reveals that the low risk of investment, more returns, and the usage of extra income from non-farm sources for timely agricultural practices on the farm are the main reasons to adopt off-farm activities ^{[24][25]}. It is almost unanimously agreed that farmers with non-farm income are more likely to spend more on seeds, fertiliser, plant protection, and labour ^[26]. Thus, non-farm income provides a cushion against any uncertain event the farm faces for bearing loss yet allows for the continuity of uninterrupted farming operations ^[24]. Hence, such variation in vulnerability and risk exposure among various income sources attracts farmers to adopt less-risk associated income options as a risk management strategy ^[27]. Reardon et al. ^[28] also noted that households must focus their attention on income diversification strategies to minimize income risks. Consequently, off-farm activities play an important role—apart from reducing risk in income flows—in stimulating the growth of the rural economy and reducing the poverty level ^{[12][29]}.

Oluwatayo ^[30], in his study, explored the major determinants of diversification using the tobit regression model for a sample of 420 respondents in the case of rural Nigeria. He discussed the major role of various socioeconomic factors that mainly affect the likelihood of income diversification practices among farmers, including farm families' income from farming, the education level of the household head, and perceived economic situation of the country. Similarly, ^[31] demonstrated the effect of non-farm income on the living standard of farming households while noting factors including age, patriarchal family structure, formal education level, farm size, and the family's poverty status as major determinants for opting to non-farm income diversification.

3. Conclusions, Policy Recommendations, and Future Outlook

With the passage of time, it has become crucial for the majority of the farmers to espouse non-farm economic activities to fulfil farming expenses and increase their livelihood. Due to climate change and other reasons, exclusive dependence on agricultural income among the farming community has become laden with heavy risk due to its uncertainty, hence farmers try to support their income from non-farm sources. We divided non-farm income sources into three types for our research, i.e., services, off-farm labour, and self-employment. In order to gain analytical insights, primary data from 290 farm households were collected through random sampling technique using structured questionnaires from three districts: Muzaffargarh, Vehari, and Bahawalpur. Logistic regression analysis was used to discover factors affecting the respondent's choice of non-farm income sources. We also evaluated the pattern of off-farm income sources among studied respondents along with various motives and reasons to opt for such activities. Various household and geographic factors were assessed for their possible impact on the choice of diversification.

The logit results showed that total farming area, number of household workers, and dependency ratio had a significant and positive impact on endorsing non-farm activities like self-employment. The probability of participation in off-farm labour provision increased with farming experience. However, the likelihood of participation in service jobs or off-farm activities increased with higher education levels, better access to roads, and family size. The findings imply a major focus on streamlining diversification options among farming communities by providing them relevant information about various job openings, nature of work, and possible payoffs. Moreover, since education has a significant impact on the uptake of various off-farm activities, providing of vocational and technical education and enhancing skillsets of the rural masses would be beneficial in a symbiotic manner by complementing their farming operations through vis-à-vis off-farm activity. These complementarities arise from the fact that farmers with better skills can execute timely and effective decisions about crop choice, input substitution, and output market targeting, thereby leading to increased farm earnings in the same farm area; this would, in turn, lead to livelihood sustainability, more disposable personal income and greater access to diversified and nutritious food (apart from farm-grown traditional food). In this scenario, they are destined to enjoy a sense of food security, additional household amenities, better personal and child health outcomes, and above all, gender mainstreaming. The gendering of livelihood comes from the fact that women find additional choices for leisure, education, employment, and secured social status once livelihood sustainability is achieved (or is perceived to be achieved in the near future). Therefore, they can also leave home for off-farm work instead of exclusively attending to domestic duties and

then striving to participate on the farm and accompany the men. These activities have been shown (rather are evident) to affect women's health, ultimately impacting their childbearing and child-raising capabilities.

Off-farm income diversification through services and self-employment is also shown to be significantly related to road access, implying the significance of infrastructure. Improved infrastructure would be helpful in many ways for the rural inhabitants in their drive for on- and off-farm diversification. Better road access is a prerequisite for easy commutation between localities for professional and service-related matters, thereby saving sufficient time that the farming community can devote to other purposes to earn supplementary livelihoods.

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