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MITIGATING RISK AND AUGMENTING FARMER'S INCOME THROUGH LIVELIHOOD DIVERSIFICATION FRAMEWORK

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Abstract

Literature suggests various ways to augment the income levels of farmers, and livelihood diversification is one among such approaches. However, risk is a critical factor that drives a farmer to diversify. The returns of a farmer are influenced by the amount of risk undertaken. In this paper, efforts have been made to understand various factors that play a key role in coping with risk and possibilities to augment income through diversification, sustaining the income earned, and so on. Though diversification is an established strategy to boost income, this paper presents a systematic approach to diversification and managing risk through the livelihood diversification framework (LDF). The systematic approach paves the way to make livelihood diversification a non-distress-driven strategy through various interventions.

Keywords: Livelihood Diversification, Income Augmentation, Livelihood Diversification Framework, Sustainable Rural Development.

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Introduction

The income levels of farmers have always been a central issue for developing countries like India. Based on income levels, economic and social analysis is done by various stakeholders in the country. Increasing income levels is often considered a complex and critical aspect, especially in policy formulation. Usually, social researchers and statisticians identify people's position in the economy by their income levels. This identification helps formulate new policies and theories around income generation activities (Ellis, 2008).

Farmers resort to three main strategies for constructing their livelihoods: intensification of agriculture, livelihood diversification, and migrating to other places like nearby cities or towns (Barrett, Reardon, et al., 2001). Livelihood diversification is one of the most important ways of poverty alleviation strategy, especially in south and south-east Asia (Hall, 2001). There are studies conducted both in India and abroad to collect evidence of its success (Jones, 2008; Kassie et al., 2017). These studies highlighted that most diversified households had succeeded when they resorted to non-farm-based income-generating activities. However, those who diversified using primarily farm-based activities were not so successful in augmenting their income levels. Overall, these studies also have highlighted that despite vast potentiality, livelihood diversification is affected by the negative perception of the communities, outdated methods and techniques, lack of systematic interventions, and absence of market linkages. Thus arises the need to study livelihood diversification and the intricacies involved in detail. In this context, it is necessary to understand how livelihood strategies for income generation are enhanced to facilitate capacity building.

The study's primary objective is to explore how livelihood diversification, as a strategy, can be enhanced. In this paper, efforts are made to understand the process of augmenting farmers' income through livelihood diversification from existing literature and substantiate it with observations from field visits.

This is primarily a conceptual paper through which we have attempted to address one of the real-world problems, i.e., enhancing rural households' economic conditions. However, conceptual works usually remain elegant theories and are not empirically tested. Nevertheless, the "what's new" question proposed by Whetten (1989) makes conceptual studies relevant.

Literature Review

Livelihood Diversification: The term diversification can be explained as a process where there is a sectoral shift from farm to non-farm activities to expand the rural non-farm economy (Start, 2001). Ellis (2001) defines livelihood diversification as an active social process of an individual or household that involves the maintenance and continuous adoption of a highly diverse portfolio of activities to secure survival and improve the standard of living.

Diversification in the farming sector is commonly interpreted as either a need for change in on-farm activities or to develop industries which are non-farm based. The first attempt is to fix problems arising out of single-main farm output, whereas the second tries to arrange alternative regular employment for farmers in their villages or nearer to the villages but not in the cities. In both cases, diversification focuses on altering the nature of full-time occupations instead of holding on to a single channel for income augmentation (Start, 2001). Some also define it as income strategies of farmers or individuals where the number of activities is expanded irrespective of location or sector (Alobo Loison, 2015) (Saha & Bahal, 2012).

Classification of Livelihood Diversification: Livelihood diversification as a strategy is broadly classified into two: distress-driven and non-distress driven. It is often commented that distress arising from uncertainties in farming pushes farmers to diversify and engage in activities that give low returns. This helps farmers in earning a stable but low level of household income. Therefore, diversification can also be understood as a process where a crisis makes it an obligatory survival strategy where multiple activities to generate income are resorted to. This leads to automatic reversal of a process called specialisation (Cinner et al., 2010).

On the other hand, livelihood diversification also enhances one's asset base and accumulation of wealth. It is also a strategy resorted consciously by the proactive farmers to widen the income-generating opportunities and place themselves financially in a better position (Barrett, Bezuneh et al., 2001) & (Cinner et al., 2010). However, these can be termed as negative factors as they may force the farmers to aspire for a greater number of avenues either within or outside the farm for income generation. These are termed negative factors, especially in the areas with less agricultural potential and prone to high risks like floods, droughts and environmental degradation (Haggblade et al., 2007).

But it is usually found that livelihood diversification in rural areas, to a large extent, is distress-driven (Saha & Bahal, 2012). The farmers, who have survived under adverse conditions, are considered experts and are popular in the growing literature on livelihoods as specialists in the art of survival under adverse conditions (Davis, 2003). Small-scale farmers use a wide range of techniques to secure themselves from the vulnerability arising due to variability and change in climatic conditions. Some techniques are managing crops and livestock, diversifying their livelihoods, and managing land usage (Phillipo, 2015). Access to non-farm income-generating sources in remote rural areas might help address the issues related to extractive practices in local areas by landless inhabitants and farmers for their survival. It is otherwise known as the substitution of employment for the environment. A lot of attention has been given in policy literature to this concept. Besides, problems due to poverty and environmental factors can be addressed and managed effectively by diversifying livelihoods. Therefore, similar to China, livelihood diversification can be considered as an indicator which is effective in evaluating the success and sustainability of farmers in rural areas (Liu & Liu, 2016) of India.

Reasons for Livelihood Diversification: Some of the common reasons which push farmers for diversification are risks of different forms mainly arising out of seasonality and climatic conditions like drought, floods, etc. (Ellis, 1998). Other factors for diversification include small landholdings, no market access, underdeveloped infrastructure, and high costs in farming (Dercon, 2002), (Ellis, 1998) & (Reardon et al., 1992). Some factors may attract or pull farmers to diversify their livelihood activities to improve their living standards. These factors offer benefits to farmers to expand their income-generating avenues outside farming, giving them more scope to increase returns from non-farming activities. These factors are more dominant in the areas where the agricultural environment is more dynamic and less risky (Haggblade et al., 2007).

According to Kassie et al. (2017), farmers diversify due to the limited risk-taking capacity of an individual and the absence of a strong financial system. This creates a strong incentive to select a range of activities leading to a regular and stabilised income inflow overcoming the constraints of labour, markets, landholdings, and climatic uncertainties (Kassie, 2018).

Ellis (1998) and Fahy Bryceson (1996) state that the main influencing factor for livelihood diversification includes heterogeneity of labour markets which arise out of different sets of culture, place of income generating activity, gender, technical skills, existence of risk, and seasonality. Low credit rate access across farm households (Reardon, 1997) and usage of cash for consumption purposes instead of income generation lead to livelihood diversification in developing countries (Taylor & Wyatt, 1996). Also, some researchers believe disasters, migration (Bigsten, n.d.), and increase in population (Malmberg & Tegenu, 2007) cause livelihood diversification.

Some argues that due to the absence of proper insurance and credit markets, farmers dedicate a significant quantity of resources to have a stable income and immune themselves from the contingencies arising from irregular and fluctuating income (Abdulai & CroleRees, 2001; Bardhan, 1973). Better relative returns, insufficient farm production, risky returns to farming, and a need for non-cash farm sources to pay farm inputs motivate labour allocation to the non-farm sector (Reardon, 1997). Therefore, livelihood diversification can happen for many reasons, such as farmers choosing to accumulate or expand their wealth base in terms of assets, adopting a strategy driven by distress brought on by a crisis, etc. (Martin & Lorenzen, 2016; Barrett, Bezuneh, et al., 2001).

Diversification: Is It Necessary? The literature on livelihood diversification asserts that diversification enables farmers to lower their dependence on resources from the environment, thereby leading them to restore the environment. Off-farm employment encourages people to move out of rural areas leading to an outflow of the rural population. This, in turn, decreases rural population and helps to achieve developmental targets quickly. However, a shift in population from rural places to off-farm activities may lead to higher rates of rural-to-urban migration, which is a critical issue for policymakers to handle (Wang et al., 2016).

When situations in agriculture are precarious, and poverty levels are high, poor and small landholding farmers often resort to alternative income-generating activities without having necessary assets (Barrett, Bezuneh, et al., 2001). These activities give low returns and are sometimes risky non-farm activities; for example, working as contract labour in construction sites and factories, providing domestic help, etc. Some households are wealthy and have favourable agricultural conditions, which drive them to diversify for generating more income and widening their asset base, leading to wealth accumulation (Makita, 2016) & (Haggblade et al., 2007). Therefore, diversification acts as a strategy that can be associated with survival and distress under a catastrophic situation. Also, under favourable economic circumstances, it is understood as a livelihood enhancement strategy (Niehof, 2004).

To reduce income risks arising from predictions, farmers in developing countries engage their labour in income-generating activities that are non-farm in nature. This is done to withstand food security, including consumption and income during low farm productivity and income shocks arising from drought. Sometimes, due to market failures, diversification happens to earn cash income for financing farm investments (Kassie, 2018). Evidence shows that the demand for labour in non-farm sector is also created due to the agricultural product mix. The agricultural product mix is influenced highly by the input requirements and processing of agricultural products. However, one of the major challenges in the Indian agriculture sector is small landholdings. Due to small landholdings, farmers find it almost impossible to generate higher returns; they lose bargaining power, fail to adopt new and sophisticated techniques and fail to break-even, forcing them to remain in financial distress. This hinders the growth and development of households in multiple ways. In this context, many researchers and policymakers advise systematic interventions backed by a scientific approach.

Therefore, in this paper, the primary focus is on making livelihood diversification a non-distress driven strategy. To make it a non-distress driven strategy, a thorough understanding of various issues at the grassroots level is essential, which can help design systematic and scientific interventions.

Methodology

Study Regions: The study was conducted in some areas of Andhra Pradesh and Tamil Nadu through field visits. The field visits were facilitated by two organisations 'T1' and 'T2' (both the organisations' entities have been kept confidential as per their request), which are charitable trusts. Both organisations work extensively to uplift the overall living conditions of people in rural areas. The organisations were chosen because of their reach and impact in the selected study areas. As part of the study, 26 villages in Vijayawada region, 18 villages in Anantapur district of Andhra Pradesh, and villages surrounding Hosur and Padavedu regions in Tamil Nadu were studied. The field visits were conducted in three phases - in Ananthapur region for nine days, with T1 for eight days in Vijayawada region and with T2 organisation for 10 days in the villages of Tamil Nadu.

All the villages studied are different in terms of demographic distribution, geographical location, agricultural and ecological potentials, access to markets, and social and cultural aspects. As a whole, the regions for study are uneven in terms of development (both social and economic).

Qualitative Approach to the Study: The main intention behind selecting qualitative fieldwork was to understand and capture a variety of activities undertaken by different farmers (Alobo Loison, 2019). Qualitative fieldwork enables one to have an in-depth understanding of the main research objectives along with rich information and helps in understanding the interpretation of the outcomes better.

The data was collected through in-depth interviews with the head of rural farm households and their spouses, leaders of the farmer groups, government officials, village heads, and self-help groups. A list of farmers to be interviewed was made in consultation with the head of the respective organisation and the village chief. To draw the list, purposive sampling was done based on the economic status, location, occupation, gender and social status.

The interviews were conducted based on a structured schedule to explore issues of income generation, alternative livelihood-generating activities, challenges faced in the course of livelihood generation, factors enabling and encouraging livelihood generation, etc. The schedule was administered in the form of an informal dialogue, and a brief introduction to the objective of the study was presented before the interviews. During the interview, apposite topics related to income augmentation were explored and discussed whenever demanded, based on the response given by the respondent. In the end, the data collected was shared with the organisation and village chief. This helped validate responses and minimise bias which could be of personal or convenience in nature, which is often questioned when purposive selection is made.

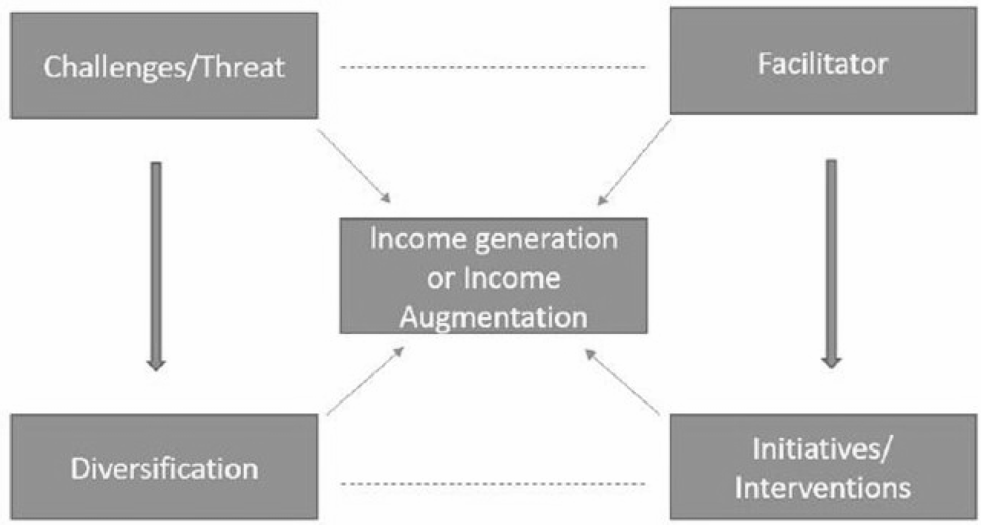
Data Analysis and Interpretations: The data collected from field visits and interviews were analysed using MAXQDA software which helped to refine the transcripts and organise them in an orderly manner while classifying them into various categories. Overall, more than 48 in-depth interviews were analysed. The process of analysis mainly consisted of going through the text and assigning relevant code for the same. The primary analysis of text resulted in assigning 586 qualitative textual codes, which were further classified under five heads: (a) Income augmentation, (b) Challenges/threats, (c) Diversification, (d) Facilitator, and (e) Initiatives (Figure 1).

A broad understanding of qualitative text analysis could be explained as challenges or threats that lead rural households to diversify or migrate. Organisations that intervene as facilitators with various interventions address the challenges or help people in the diversification process.

In developing countries like India, it is found that livelihood diversification is one of the most preferred livelihood strategies. This is essentially due to the inherent flexibility and diversification provided to an individual. A household diversifies on the basis of risk-taking capacity and skill sets they possess. However, it is also observed that due to lack of access to markets, financial resources, in-depth knowledge of nuances related to skill sets, etc., these skill sets do not help in income augmentation of rural households. Therefore, to a large extent, diversification of rural households is found in farmers switching from farming to non-farming activities. These non-farming activities include farmers working in construction sites, quarries, etc., on a daily wage basis or migrating to urban areas in search of a job that gives them steady income. These activities help households cater to their day-to-day expenses but do not help to save and grow financially stronger. Therefore, even after diversification, most households remain distressed and economically weak. The problems can be addressed by bringing in systematic and scientific interventions in different ways at various stages of households' economic growth process.

Figure 1

Graphical Representation of Inter-Relation between Codes



Source: Author.

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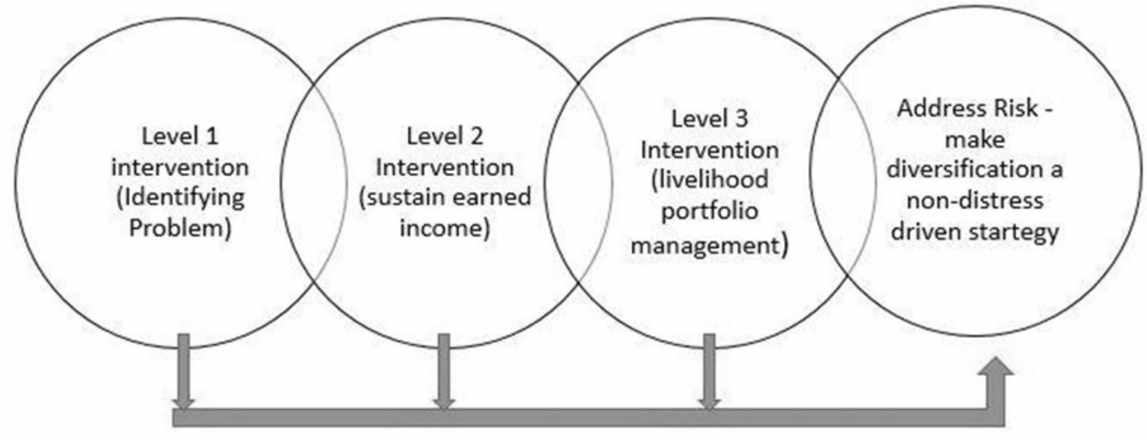
Livelihood Diversification Framework: The primary aim of the Livelihood Diversification Framework (LDF) is to present a systematic approach wherein the diversification process is more encouraging and helps farmers to augment income and enhance capacity and capability for income generation. The success of livelihood diversification is affected by various factors, such as risk, innovation, access to markets and finances, policies, values, belief system, religion, language, etc.

Figure 2

Various Levels of the Framework Addressing risk in LDF



Based on the literature review and observations from field visits, four factors were considered in LDF, namely risk, innovation, market access, and policies. These factors can broadly be classified as internal or external factors. For example, risk becomes an internal factor when it arises because of farmers' actions, like selecting a crop or a particular brand or type of seed. However, if risks like crop damage due to pest attack, adverse weather conditions, socio-political reasons, etc., occur due to factors beyond the control of farmers, it can be treated as an external factor. Similarly, a farmer's geographical location, education, bargaining power, etc., make the market an internal factor. However, unpredictable changes in market demand and multiple players in the area make the market an external factor. A farmer using local ideas and personal knowledge to enhance farming techniques makes innovation an internal factor. But competition in the market, collaborations with organisations, etc., classify innovation as an external factor as the control is not in the farmer's hands.

Management of the factors, especially internal factors, helps mitigate and lower risk, leading to income augmentation. In LDF, these factors are managed systematically through interventions classified as Level 1, Level 2, and Level 3. However, these levels and factors addressed in the framework are not exclusive as they sometimes overlap.

These interventions can be made by corporates, non-government organisations, government institutions, etc. Through different levels of interventions, LDF highlights and addresses the problems faced in income augmentation (Level 1), how to sustain the income of farmers (Level 2), and the growth of farmers (Level 3).

Figure 3

Livelihood Diversification Framework

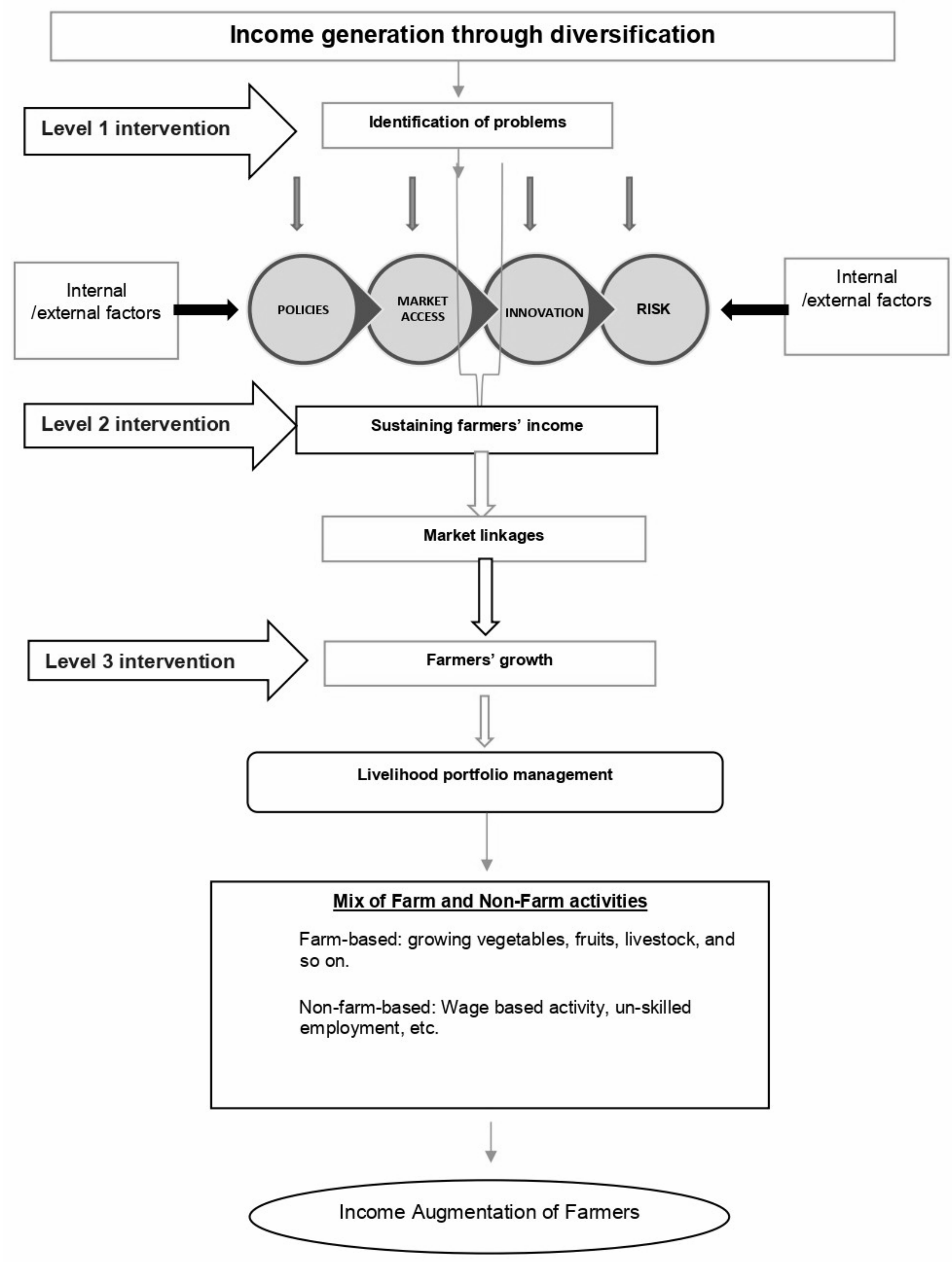
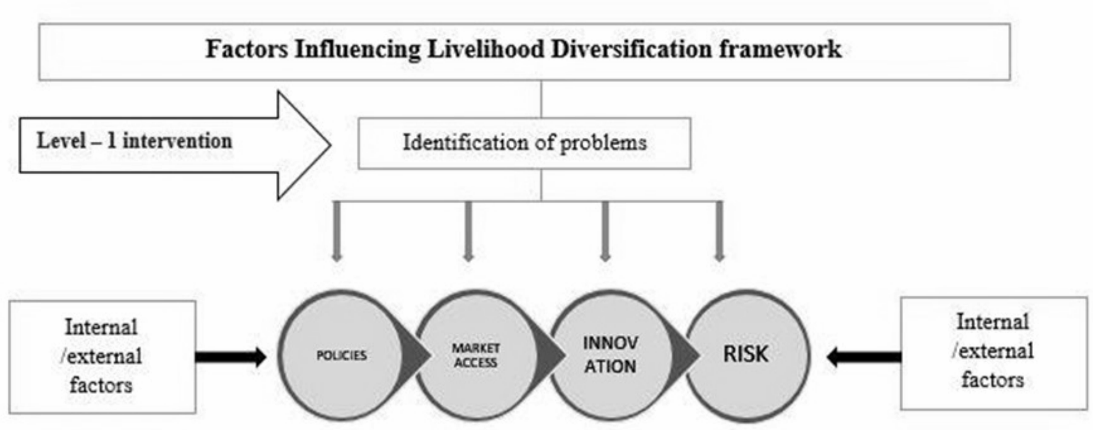


Figure 4

Level 1 Intervention



Level 1 Intervention: Level 1 intervention focuses on identifying and addressing the main challenges faced by farmers in income generation and income augmentation. Identifying challenges in income generation involves exploring issues at the grassroots level, followed by identifying solutions to address the problem.

Issues can be identified through baseline surveys, interaction with focused groups, and scrutinising and examining the data available with the government. Some of the aspects which help in income augmentation can be the availability of water resources for farming, storage facilities, access to markets and information about prevailing prices in the market. Factors that hinder a farmer's income augmentation could be fragmented landholdings, lack of bargaining power on account of market monopoly, lack of access to financial services, etc.

For instance, multiple factors can impede a farmer from getting desired income from farming. It could be the geographical location coupled with weather conditions, which may not be suitable for the crop being grown or the soil type and moisture content may not be conducive for the growth of the crop. It could also be excessive production and less demand in the region of farming and lack of access to financial services. The possibility of income generation increases when various challenges and risks are addressed systematically.

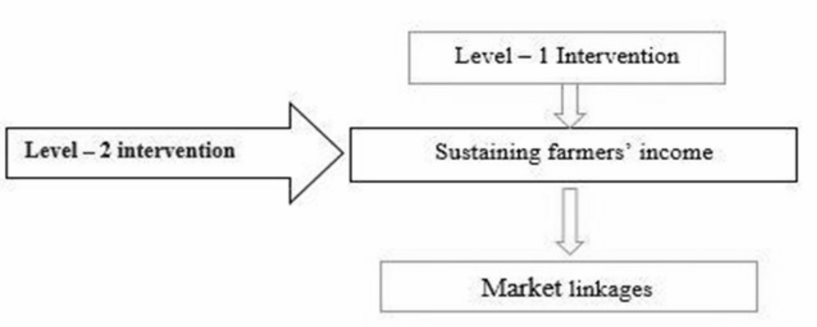
However, sustaining the income generated is very critical and essential. The factors governing sustainability and the process of maintaining farmers' income are discussed in the Level 2 intervention.

Level 2 Intervention: Farming is a seasonal activity; therefore, the income earned from farming is also seasonal. The focus of Level 2 intervention is to identify and address the key factors enabling the sustainability of income earned. Though diversification of livelihoods as a strategy may help, identifying and enhancing the factor causing sustainability is very critical to make diversification of a non-distress driven income-generating strategy. Market linkages is one such factor that helps farmers to manage the risk, produce based on demand, collaborate, approach and attract markets.

Managing the risk helps to enhance the capacity to absorb and overcome various uncertain shocks in farming. Gaining a good income may allow farmers to mitigate risk. For example, a farmer growing cotton can be affected due to excessive rains. Excessive rain can lead to crop failure, or excess moisture in the soil may affect the quality of the final output, reducing the possibility of earning more income. In this case, a forward contract with an organisation may help the farmer to ensure a better return. Also, if options for value addition are available in the organisation, it will further enhance the income of farmers. These contracts help farmers to produce according to market demand and improve the quality of the production. If the product quality and production process are satisfactory, the organisations may renew the contracts and help farmers get a continuous income.

Figure 5

Level 2 Intervention



If a farmer is located in a region near urban area and has access to various markets and customers, then it can give him/her more options to sell and earn money. However, knowledge of prices and best practices in farming and the market can give farmers a competitive advantage. Linkages to markets also focus on bringing customers to the producer by creating a platform. Thus Level 2 intervention helps address some of the challenges in sustaining the farmers' income. Sustaining income may help the farmers accumulate wealth, save, and grow economically stronger. The process of farmers growing economically stronger is explained in Level 3 intervention.

Figure 6

Level 3 Intervention

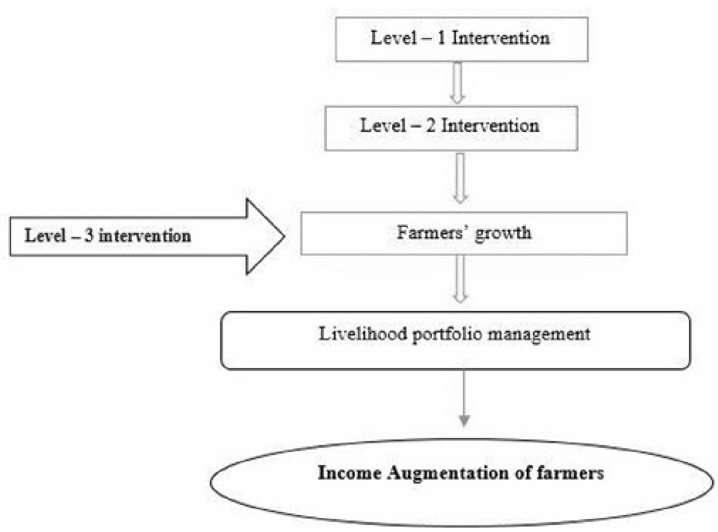


Figure 7

Code Matrix of Qualitative Data Analysis

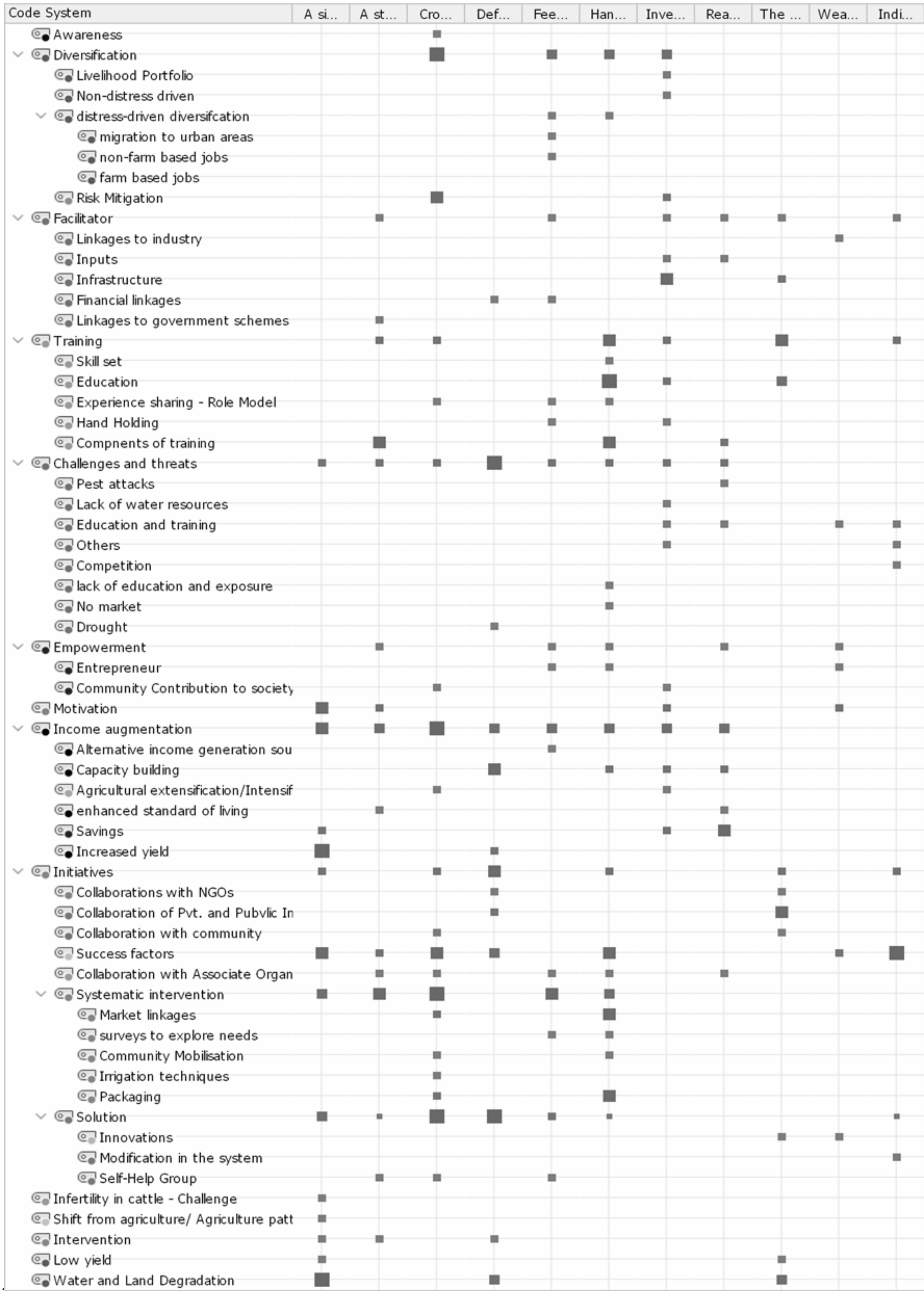
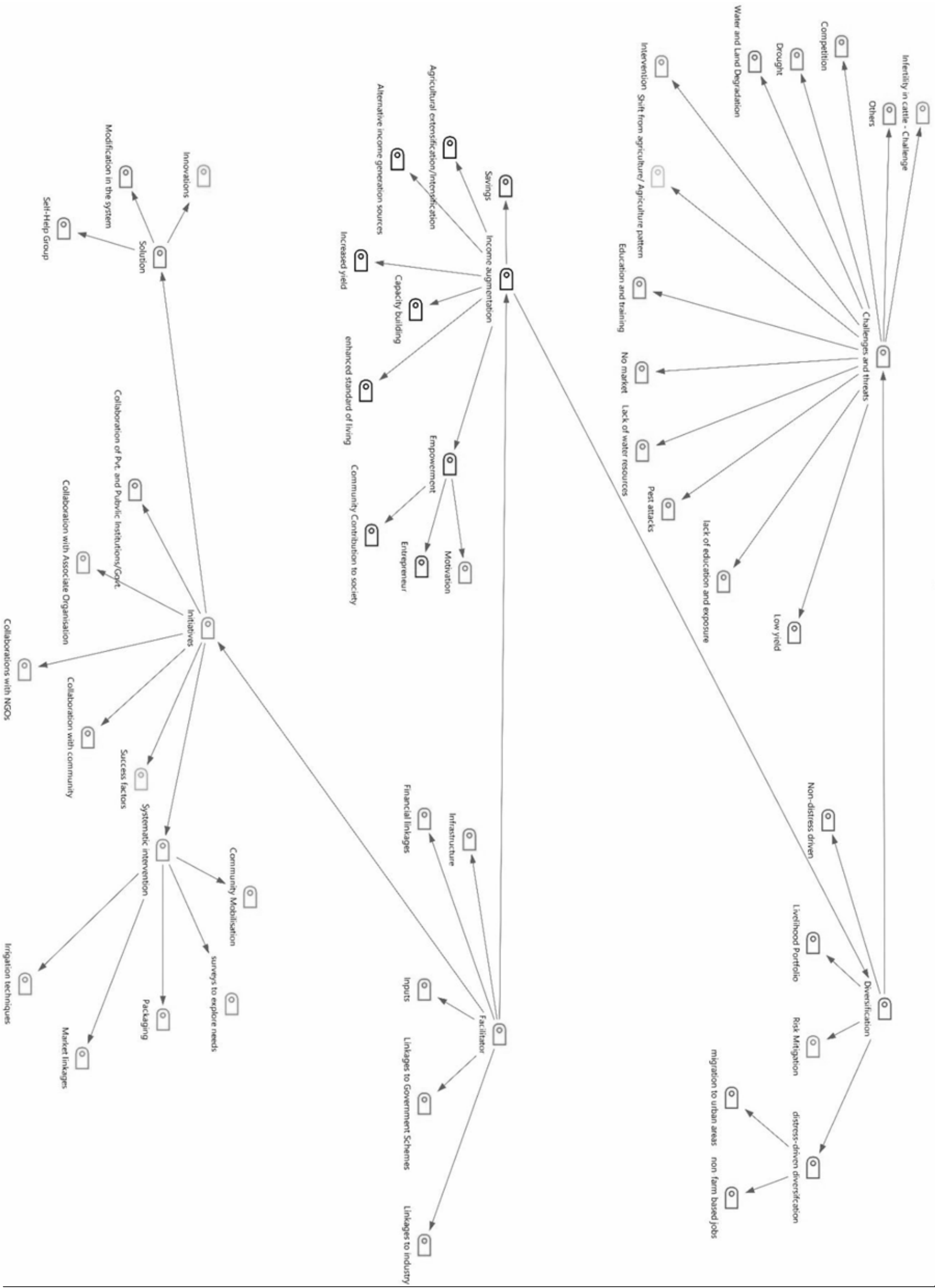


Figure 8

Creative Coding



Growth literally means an increase in size. In LDF, through Level 3 intervention, a farmer's growth is presented from the lens of income generation and augmentation to build capacity and capability. Sustained income can help the farmer to accumulate wealth that can be invested to augment income and build capacity and capability for income generation. The methods to increase capacity and capability include learning new skill sets, expanding the current income-generating activity, diversifying into farm to non-farm-based activity and vice-versa, intensifying the current income-generating activity, specialising in a particular method or crop and so on.

A farmer can create a portfolio of income-generating activities where a mix of various crops based on time, seasonality, investments, etc., can be decided. Otherwise, a portfolio of farm-based, off-farm-based, and non-farm-based activities can be designed. The primary focus of the livelihood portfolio can be enhancing income through multiple income-generating activities or offseting losses, if any, from various income-generating activities. This way, income can be augmented and sustained, and farmers can grow economically stronger. For example, a farmer can grow seasonal short-term crops, like vegetables and flowers, along with other short-term crops. They can earn sustained income by growing trees like coconut, mango, etc. In addition to farming, farmers can also opt for livestock breeding, setting up a small cottage industry or value-adding unit for the crops produced. Farmers can think of producing organic compost to turn the entire agricultural practice into organic farming, which can fetch more returns.

Similarly, setting up a farmer producer organisation would help the farmers come together, manage resources efficiently and augment income. However, an FPO would require an excellent ecosystem to operate and support external agencies, which the interveners can do in LDF.

Discussion

Livelihood diversification is a phenomenon that characterises the survival and income strategies of individuals and families in rural areas (Ellis, 1998). A diversified portfolio of livelihood strategies and income from each income-generating activity in the portfolio indicates that people in rural areas often engage in multiple income-generating activities. Livelihood diversification, therefore, is an essential strategy for survival, growth, and reducing risks in a rural economy setting (Liu & Liu, 2016). However, diversification in rural areas is often not systematic (Jiao et al., 2017). The framework presents a systematic way of addressing challenges faced by farmers in income augmentation, making the strategy more encouraging and attractive. The three levels of the framework address the micro and macro challenges affecting the economy.

Various factors influence farmers' income. In a country like India, where agriculture is largely dependent on rains, an extreme monsoon condition can cause severe drought or floods, posing a high risk for income generation and income augmentation. Continuous deficits in rainfall and the absence of proper water harvesting techniques can cause severe losses to a farmer, push him/her into chronic poverty. On the other hand, excessive rainfall affects crop health and soil health, leading to crop damage and a dip in productivity. Therefore, in both cases, the amount of uncertainty and risk involved create much stress for farmers. Also, hazards arising from pest attacks, other natural disasters, market uncertainties, and price fluctuations influence a farmer's income to a large extent. Often, the income earned by farmers is insufficient, and a large portion of it goes into meeting daily consumption. Farmers take loans to recoup the losses and meet their ends, diverting a large portion of it to meet their consumption needs and a part is allocated for income-generating activities. Apart from financial challenges, rural livelihoods are also vulnerable to contextual socio-cultural factors that drive farmers to quit farming and migrate to urban areas, and settling for non-farming activities to earn a regular income. In order to retain farmers in villages and reverse the migration process, a systematic knowledge and process related to livelihood strategies and livelihood diversification need to be created. An understanding of these strategies and their linkages to macroeconomic policies are essential. LDF is a conglomeration of diversification processes and strategies to help farmers augment income.

Conclusion

The purpose of choosing non-distress driven strategy over distress driven approach for livelihood diversification process is to help farmers earn additional income, augment their current income and gain economical strength.

The livelihood diversification framework is the first-of-its-kind concept that explains the challenges in livelihood diversification. Addressing these issues, especially risk, is critical and essential to make the diversification process more profitable.

It integrates various aspects that influence the diversification process for creating avenues to generate income, sustain earned income, and enhance a farmer's capacity. The framework presents the concept of livelihood portfolio management. The scope of research lies in elaborating and discussing livelihood portfolio management, which is at a nascent stage in the literature. It can possibly shed more light on various nuances and intricacies of the livelihood diversification methods.

Author's Contribution

K. J. Srinivas: Conceptualisation, Methodology, Validation, Data Analysis, Writing original draft and Visualisation.

B. Sai Giridhar: Conceptualisation, Methodology, Validation, Data Analysis, Writing review and editing, Visualisation, and Project administration.

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