



South Asian Journal of Agricultural Sciences

E-ISSN: 2788-9297

P-ISSN: 2788-9289

SAJAS 2022; 2(2): 21-28

Received: 09-04-2022

Accepted: 11-05-2022

Guduro Beriso

Jimma University College of
Agriculture and Veterinary
Medicine, Ethiopia

Asefa Tadessea

Jimma University College of
Agriculture and Veterinary
Medicine, Ethiopia

Geremewu Motuma

Jimma University College of
Agriculture and Veterinary
Medicine, Ethiopia

Correspondence

Guduro Beriso

Jimma University College of
Agriculture and Veterinary
Medicine, Ethiopia

Review factors affecting small holder Farmers livelihood diversification in Ethiopia

Guduro Beriso, Asefa Tadessea and Geremewu Motuma

Abstract

This paper is about literature review on factors affecting livelihood diversification in Ethiopia and the situation regarding smallholder farmers. It reveals mixed findings of factors affecting the livelihood diversification of smallholders. The paper reviewed the most recent research articles and review papers and 55 documents papers from journals, articles and books were reviewed. In their studies, the researchers used both descriptive measures and econometric analysis. The descriptive part of the review reveals that the livelihood diversification strategies in recent studies conducted in different parts of Ethiopian regions. According to recent studies, smallholders farmer diversify their livelihood through on-farm, nonfarm, and off-farm income-generating activities. In Ethiopia, 83% of small farmers are involved in agricultural activities, and only 27% are involved in Off-farm/ non-farm activities. On the other hand, the econometric analysis part of the reviewed articles reveals that sex, age, family size, educational level, access to credit service, remittance-receiving, farmer's association membership; total annual cash income had significant positive relation with farmers' livelihood diversification. On the contrary land size, age of family head, Agro-ecology, fertilizer utilizes, number of oxen, tropical livestock units, access to training, access to extension services, dependency ratio showed significant negative correlation with farmers livelihood diversification. To allow for a decent livelihood, the policy of diversification should focus on access to agricultural land, support for storage and expansion, capacity of smallholder farmers through agricultural training, improvement of expansion services, focus on creating a sense of gender, and provision of adequate infrastructure to be considered.

Keywords: Descriptive measures, econometric analysis, smallholder, livelihood diversification

Introduction

Globally, agriculture accounts for 67% of employment, 39.4% of GDP, and 43% of exports and is an important sector for the livelihood of the majority of rural population in developing countries. This is a key function for most smallholders in sub-Saharan Africa, which provides a strong option to stimulate growth, poverty alleviation and improve food security (FAO, 2015) ^[23].

The Ethiopian economy is largely dependent on agriculture. Its share of GDP is 41 percent, exports 90 percent and employment 85 percent. Small-scale agriculture dominates the agricultural sector and accounts for 95 percent of the total area under cultivation and more than 90 percent of crop production. The livelihoods of 84% of the citizens depend on various agricultural productions (Fikremarkos, 2012) ^[24].

Ethiopia's subsistence cultivation, arable lands and low agricultural capacity force people or family units to expand their livelihoods. Farmers in Ethiopia participate in livelihood diversification exercises to expand the accumulation of household income and to protect livelihoods from expanding climate and financial crisis, as well as to eliminate poverty (Kassa, 2019) ^[31].

Livelihood diversification is a process by which families create a portfolio of different activities and assets to maintain and improve their quality of life (Helmy, 2020) ^[58]. (Weldegebriel and Prowse, 2013) ^[48], Livelihood diversification is a protocol in which people and family units diversify resources, incomes, and training as they draw factors to reduce risk and realize strategic complements between activities.

Diversification of livelihoods is a strategy for overcoming economic and environmental shock and a tool to ease poverty. However, the unequal distribution of family property and resources restricts them to diversify into higher income segments (to improve their prosperity), and lower income segments (Gautam and Andersen, 2016) ^[25]. In this way, diversification can have both positive and negative impacts on the country's household livelihoods.

When family units are more secure, its impact is positive while minimizing the adverse effects of the season (Weldegebriel and Prowse, 2013) ^[48]; but it can result in negative impact when it raise households vulnerability for different risks (Kassa, 2018) ^[55].

Like other world, rural individuals in Ethiopia diversify their resource, income and activity due to push and pull factors. Push factors are negative factors that may force farm households to seek additional livelihood activities within or outside the farm whereas Pull factors are positive and these may attract farm households to pursue additional livelihood activities to improve their living standards (Kassie, *et al.*, 2017) ^[32]. They diversify their livelihood through on farm, nonfarm, and off farm salary producing exercises (Kassa, 2019) ^[31]. On farm is income generated from crop and livestock on owners farming whether on owner occupied land or rented land (Weldegebriel and Prowse, 2013) ^[48], and off farm pay is temporary wage or exchange labor on others farms within agrarian segment (Yizengaw *et al.*, 2015; Ofolsha and Mansingh, 2015; Asfir, 2016; Gecho, 2017) ^[53, 40, 15, 28]. They diversify their livelihoods through non-agricultural income, which can be classified as secondary and tertiary (Kassa, 2018) ^[55] or non-agricultural activities such as rental, nutrition and beverage handling, remittance (Gecho, 2017) ^[28]. In Ethiopia, 83% of smallholder farmers are involved in agricultural activities, with only 27% engaged in non-farm / non-farm activities (Adem *et al.*, 2018) ^[3].

Various factors such as experience, family size, educational attainment, status and physical assets of the home may influence participation in diversification activities (Khatun and Roy, 2012) ^[35]. (Yona and Mathewos 2017) ^[54] also reported that the intensity of diversification is affected by the amount of land available, the value of livestock ownership and the amount of income from crop production. They also pointed out that statistical factors such as the age and gender of the head of the household, the proportion of dependents and the number of female members of the household determine participation. However, (Gebbru, *et al.*, 2018) ^[27] refers to education, access to credit, income, membership for cooperatives, land size and farm input utilization, whereas age, dependency ratio, family size, access to extension services, distance to market, livestock ownership.

The environment and challenges of the smallholder agriculture sector in SSA have created agricultural uncertainty that, for many rural households, does not seem to provide an adequate livelihood (Alobo and Harriet, 2017) ^[9]. Rural families in SSA particularly, Ethiopia often maintain a diverse portfolio off farm and non-farm and farm activities to sustain their livelihood (Kassa, 2019) ^[31]. Farm families diversify their activities over time, mainly to protect survival, diversify risk, finance farm inputs, reduce income variability, and increase income.

In sub-Saharan African countries (Babatunde, 2013) ^[16] agriculture has failed to be the primary source of income to ensure adequate livelihoods for most farming families. This is because the agricultural sector in Ethiopia is characterized by declining farm sizes, low production per farm and high subsistence farming. Moreover, agricultural activities in rural Ethiopia are dominated by small owners, with the majority cultivating less than 0.5 hectares and producing mostly basic foodstuffs for the livelihood of their households (Gebreyesus, 2016) ^[26].

Therefore, the expectation of achieving the goal of reducing poverty cannot be successful in the country only by increasing agricultural productivity and addressing the problems of access to vital agricultural resources without non/off-farm livelihood diversification. Through lifestyle diversification, people have more choice and flexibility in their lifestyle strategies, and they are more able to withstand shocks and stress (Yizengaw *et al.*, 2015) ^[53]. The diversity of smallholders is an important aspect of survival in rural areas. As the primary source of subsistence crop production in Ethiopia, harvest failure leads to food shortages in the absence of off-farm income opportunities, leading to property reduction and increasing poverty at the household level (Gebreyesus, 2016) ^[26]. Despite the importance of livelihood diversification against the inability of the Ethiopian to perform, it can be affected by different factors. Therefore, this study will be designed and conducted to investigate on the review on factors affecting livelihood diversification in Ethiopia.

Factors affecting small holder farmers livelihood diversification in Ethiopia

Smallholder's farmer livelihood diversification strategies in Ethiopia

Within the community of the research area, diversification takes many forms like; Diversification within agriculture or on-farm(on-farm) which includes land use, crops, livestock diversification, intensification and intensification practices; Off-farm activities like labor wage working from other farms with-in agriculture sector and Nonfarm activities like non-farm employment, urban-to-rural remittances, rental income, non-farm rural-wage, and international remittances to a farm household (Kassie, 2017) ^[32].

According to Ellis (2000) ^[22], livelihood activities can be categorized into three specifically on-farm, nonfarm, and off-farm. On-farm activities are activities, which are specifically related to agrarian production focused on both crop production and animal husbandry activities. Nonfarm activities are activities that take place outside the agricultural sector including non-agricultural wage or salary employment and self-employment, rent income, exchanges, and settlements. Off-farm activities refer to rural exercises that take place outside the person's own farm agricultural wage or trade labor and common asset extraction (basically charcoal making).

In Ethiopia, most of the studies conducted recognize three smallholders' farmer livelihood diversification strategies like; on-farm, non-farm and off-farm (Mengistie and Kidane, 2016; Debele and Desta, 2016; Gecho, 2017; Kassie *et al.*, 2017; Ofolsha and Mansingh, 2015; Dadi, 2016; Asfir, 2016; Addisu, 2017) ^[36, 20, 28, 32, 40, 18, 15, 2]. Moreover making charcoal, every day laborer, contraband trading (Tenaw, 2016) ^[44], wage, and handcraft (Mengistu, 2016) ^[37] were livelihood diversification activities. In any case, Tenaw (2016) ^[44] and Mengistu (2016) ^[37] need detail and plain difference among livelihood activities. Livestock Trade, Causal Labor and Remittance were Off-farm and Non-Farm Livelihood Strategies (Tilahun *et al.*, 2017) ^[56].

On-farm livelihood activities

Researchers mention crop production and livestock rearing as major activities of on-farm livelihood activities. Supported the sort of jobs, Addisu (2017) ^[2] classifies livelihood strategies as on farm activities into like farming,

breeding, fishery. Decided by Kassa *et al.* (2019) ^[31], livelihood diversification strategies on farm were crop and livestock production. Supported by Mengistu (2016) ^[37] revealed that the major livelihood diversification activities were crop and animal production.

Off-farm activities

Off-farm activities were activities, which were done to somebody else's farm such as wage labor, natural asset-based activities like firewood/grass and charcoal offering (Yizengaw *et al.*, 2015; Ofolsha and Mansingh, 2015; Asfir, 2016; Dadi, 2016; Gecho, 2017) ^[53, 40, 28, 18, 15]. Smallholder farmers move to other areas as mercenaries for fear of the negative attitude of society (Yona and Mathewos, 2017) ^[54]. Small / local trade, remittance, supply of handicrafts, timber and wood products (firewood and charcoal) were off-farm activities in rural communities (Mengistie and Kidane, 2016; Debele and Desta, 2016) ^[20]. (Mengistie and Kidane, 2016; Debele and Desta, 2016) ^[36, 20] Extracurricular activities involving rural communities. Some other cultivation activities were the sale of local beverages (Tella, Areki); Carrying personalities and goods using handicrafts; Salary from temporary or permanent employment; Renting inactive or extra bulls; And income from factories (Mengistie and Kidane, 2016) ^[36], daily labor and assistance (Debele and Desta, 2016) ^[20]. They do not recognize non-farm activities. However, Mengistie and Kidane (2016) ^[36] and Debele and Desta (2016) ^[20] didn't recognize non-farm and non-farm activities.

Non-farm activities

Functions such as; Small Trade, Crafts (Weaving, Spinning, Carpentry, Homemade Mud, Poet Making) (Yishenkov *et al.*, 2015; Opolshaw & Mansingh, 2015; Asper, 2016; Daddy, 2016; Jonah and Mathews, 2017; Kecho, 2017) and Solution (Yishenkov *et al.*, 2015; Daddy, 2016; Jonah and Mathews, 2017; Kecho, 2017; Mohammed and Dolosa, 2016) Non-farm activities. As well as, sale of local beverages (Tella and Areke) (Yizengaw *et al.*, 2015; Dadi, 2016; Ofolsha and Mansingh, 2015; Gecho, 2017) ^[53, 18, 40, 28] and the rental of pack animals such as donkeys for transport (Gecho, 2017; Yona and Mathewos, 2017) ^[54, 28] were non-farm activities. All non-farm livelihood activities in which farmers participate include renting (hiring) oxen and land (Yona and Mathewos, 2017) ^[54] and wage labor (Ofolsha and Mansingh, 2015; Dadi, 2016; Asfir, 2016) ^[40, 15]. In addition, the offering of the unskilled labor force and prostitution (Ofolsha and Mansingh, 2015) ^[40], mining (Asfir, 2016) ^[15], the exchange of small ruminants and livestock (Yizengaw *et al.*, 2015) ^[53] were non-agricultural livelihood sites for small farmers.

Yishak and others worked. (2016), Non-farm livelihood activities include daily labor, local liquor, formal and non-farm employment, sale of firewood and charcoal, preparation and sale of food, carpentry, transportation of products, sand extraction and sale. But, Yishak *et al.* (2016) Combine off-farm and non-farm activities.

The factors influencing the practice of smallholder farmer's livelihood diversification in Ethiopia

Factors of livelihood diversification fall into two wide categories: "push" versus "pull" factors. Push factors are negative factors that will drive farm family units to look for extra livelihood activities within or outside the farm. Pull

factors tend to dominate in high-risk and low-potential agricultural situations, subject to drought, flooding, and environmental degradation (Alobo, 2015) ^[8]. Pull factors are positive and these may pull in farm family units to seek after extra livelihood activities to make strides in their living standards. It is Opportunity-led diversification occurs when wealthier rural families engage in high-return non-farm activities, with accumulation objectives; in arrange to extend family income by maximizing returns from their resources (Loison, 2017) ^[9]. Particularly, those Factors were classified into five types of livelihood assets, specifically, human, financial, social, natural (common), and physical capital. Different researchers recognize diverse factors, which influence livelihood diversification strategies based on the results of their inferential measurements. Nevertheless, a few of the researchers did not reason out why different Factors influence farmer's livelihood diversification. In this manner, the review paper examines diverse Factors as human, financial, social, and natural.

Natural capital

Natural capital is a common resources stocks (land, soil, water, discuss, genetic assets, etc.) and natural administrations (hydrological cycle, contamination sinks, etc.) from which livelihoods are derived (Scoones, 2000) ^[59]. Common capital that determines livelihood diversification strategies was farmland, area of the consider (agro-ecology), and nature of settlement of the family head (Kassa 2019) ^[31].

Farmland activities have had a negative impact on livelihood diversification strategies (Tamerat, 2016; Ofolsha and Mansingh, 2015; Idris, 2014; Gecho, 2017; Anshiso and Shiferaw, 2016; Aababbo and Sawore, 2016) ^[1]; Mentamo and Geda, 2016; Yizengaw *et al.*, 2015) ^[43, 40, 30, 12, 1, 38, 53]. Therefore, as farmers with large farm land sizes are encouraged to add more to agricultural activities, the likelihood of locks in different livelihood strategies decreases as family land surveying increases (Tamerat, 2016; Gecho, 2017; Aababbo and Sawore, 2016) ^[43, 1, 28]. In expansion, cultivated family units with more land area were restricted to following agricultural intensity rather than diversification (Anshiso and Shiferaw, 2016; Yizengaw *et al.*, 2015) ^[12, 43, 53].

According to Ofolsha and Mansingh (2015) ^[40], large-scale female-headed household units have the potential to increase productivity through agriculture to improve their livelihoods, thus reducing livelihood diversification strategies. Similarly, studies conducted by Idris (2014) ^[30] show low subsistence diversification for farmers with a large land area. Anyway, finding of Kebede *et al.* (2014) ^[33, 34] showed that the size of farmland has had a positive impact on livelihood diversification because better-kept family units have extra income from ordinary labor jobs, improving their farm operations.

Again Farm size of the households found positively and significantly influences their choice of household livelihood strategies. A unit increase in farm sizes indicates that families are more likely to prefer farm livelihood strategies. Thus, a large farm-sized family was able to cultivate a large area of land (Amare & Belaineh, 2013; Kebede *et al.*, 2014) ^[10, 33, 34] that enable the household to secure their livelihood. Moreover, farmers with large farm sizes tend to pursue agricultural expansion rather than diversification, on the other hand, more lands pursue more time for agricultural

intensity than diversification (Adugna & Wagayehu, 2012; Ambachew & Ermiyas, 2016; Asfaw *et al.*, 2017; Bereket *et al.*, 2018; Yenesew *et al.*, 2015) [4, 5, 11, 14, 17, 50].

Agricultural ecology has a negative and significant relationship with the possibilities of choosing on-farm plus off-farm plus non-farm. It increases as we move from the highlands to the Midlands (Adugna E. and Wagayehu B., 2012) [4, 5] declared that the influence of agro-ecology and spatial variation determines livelihood diversification. This may be due to the quality and quantity of land, the amount and distribution of rainfall and the influential population density between the hills and midlands. Agro-environmental factors show statistically significant correlation with the probability of diversification, and the probability was higher in the Midlands and Highlands compared to the lower regions (Yishak G., *et al.* 2014) [57, 52].

Human capital

Human capital is skills, knowledge, the capacity to work, and great wellbeing vital for the effective interest of livelihood strategies (Scoones, 2000) [59]. Alternatively, human resources are human skills, information, levels of instruction and the ability to contribute to improving their livelihoods (Davidson *et al.*, 2014) [19]. Sex, age, family size, educational level, agricultural extension visits and access to training are key human capital determinants of livelihood diversification.

The gender of the sample respondents positively affected the farmer's livelihood diversification strategies. Male sample respondents had better livelihood diversity than females. This suggests that female farmers are less likely to diversify their livelihoods than male-headed family units. The authors made it clear that the female-headed family units had a greater duty within the home and that it was culturally unsatisfactory to see them operating non-farm and off-farm from the city (Debele and Desta, 2016; Gecho, 2017; Aababbo and Sawore, 2016) [20, 1, 28]. Contrary to this conclusion, Yizengaw *et al.* (2015) [53] stated that the sex of the sample respondents negatively affected the farmer's livelihood diversification strategies. Later, female family heads were better diversified than a male family head because they participated in non-farm activities.

The age of the head of the family had a negative impact on livelihood diversification (Asfir, 2016; Kassie *et al.*, 2017) [32, 15]. As the age of the head of the family increases, the farmer becomes older, less diversified, and more likely to focus on farm training for their livelihood. Low access to land for young people, an increase in the service and construction sectors in Ethiopia have better opportunities for young people to differentiate livelihood activities than older farmers (Kassie *et al.*, 2017) [32]. According to Asfir (2016) [15], farmers' livelihood diversification is negatively impacted by the fact that older farmers are more experienced in agricultural production and safer for modern ideas, and less likely to diversify their livelihoods with information. Opposing to this idea, Debele and Desta (2016) [20], found a positive impact on the age-appropriate lifestyle diversification strategies of the head of the family because experience increases with age and helps to diversify livelihoods.

Family size is one of the factors that positively affect livelihood diversification (Asfir, 2016; Tamerat, 2016; Mentamo and Geda, 2016) [15, 43, 38]. This is due to the fact that large families take many steps to diversify their

livelihoods as domestic workers.

The dependency ratio measures the population of dependents (under 15s and over 64s) against the production population (ages 15-64). A home dependency ratio measures the need to maintain and meet the needs of the family. This indicates that with the increase in the dependency rate the ability to meet the needs of the livelihood is declining and that the dependency issues are necessitating the diversification of their source of income

The level of education has positively affected the livelihood diversification of families (Demissie and Legesse, 2013; Gecho, 2017; Debele and Desta, 2016; Tamerat 2016; Aababbo and Sawore, 2016; Mentamo and Geda, 2016) [1, 43, 20, 28, 38]. This is often due to the potential of an educated person to acquire better skills, experience, knowledge and the ability to find a job (Gecho, 2017) [28]. Accordingly, the educated persons were the better; a much better; a higher; a stronger; an improved">a higher capacity to diversify livelihood strategies since they may have better skills, experience, and information (Debele and Desta, 2016) [20]. In contrast to many others Kassie *et al.* (2017) [32], the instructional status of farm families has had a negative impact on livelihood diversification because educated farmers may have better specialized in farm operations using better farm technologies.

Access to extension services was negatively influenced livelihood diversification. Household those having more contact with adviser had better likelihood of livelihood diversification (Tamerat, 2016; Asfir, 2016) [43, 15]. This might be due to the actual fact that farmers having better extension contact have better get to agricultural information and technical help on agricultural activities to expand production and efficiency (Asfir, 2016) [15]. In any case, other studies revealed that frequency of visit by development agents had positive affect on livelihood diversification (Anshiso and Shiferaw, 2016) [12].

It was found out that to have a negative impact on livelihood diversification since trained farmers have better abilities, knowledge and experiences to move forward agricultural production and efficiency for satisfying their family necessities (Yishak *et al.*, 2014; Asfir, 2016) [57, 52, 15].

Social capital

Social capital is social resources such as systems, social relations, associations, etc. (Scoones, 2000) [59]. According to the survey made membership in cooperative, urban linkage, farmer's association membership and secure land right was social capital, which influences farmer's livelihood diversification.

A member of the Farmers Association was found to have a positive and important effect on home livelihood diversification (Tamerat, 2016) [43]. Institutional variables such as secure land ownership and joining co-operatives were directly related to livelihood diversification strategies. Household having secure land right will have better diversification to agriculture, agro forestry and rent-out their land. Moreover being membership of cooperative may diminish households' financial constraint, increment in social capital and entrepreneur skill and increment within the bargaining power of farmers in offering and buying their products (Kassie *et al.*, 2017) [32]. Moreover, cooperatives give better alternative to advance sharing of information, data, experience with respect to diverse livelihood diversification and implies for getting different employment

opportunities (Asfir, 2016) ^[15]. Leadership is positively influencing the livelihood diversification. This may be due to leaders have more access for information, share more experience with others in social environment, make more social organize with outside societies and get more get to formal as well as informal credits (Gecho, 2017) ^[28]. Linkage with urban individuals had positive impact on livelihood diversification since it may make strides access to information, which is critical to livelihood diversification (Yizengaw *et al.*, 2015) ^[53].

Financial capital

Financial or economic capital is money, debt, savings, infrastructure and other economic assets (Scoones, 2000) ^[59] or financial assets are access to corporate income, debt, grants or savings (Davidson *et al.*, 2014) ^[19]. Financial capital that determines livelihood diversification includes ownership of oxen, access to credit facilities, annual farm income, tropical livestock sector, remittances for food and work.

Tropical livestock units (TLUs) have had a negative impact on livelihood diversification (Ofolsha and Mansingh, 2015; Yizengaw *et al.*, 2015; Debele and Desta, 2016; Gecho, 2017) ^[40, 53, 20, 28]. Therefore, households with significant tropical livestock units were less likely to diversify their livelihoods than those with lower numbers of Tropical livestock units due to the better chance of higher income in livestock production (Gecho, 2017; Yizengaw *et al.*, 2015) ^[28, 53]. Farmers may even have less intention to non/off-farm activities diversification (Debele and Desta, 2016) ^[20]. Opposing this Asfir (2016) ^[15], it had a positive impact on livelihood diversification since farmers having more number of TLU had more money to invest in on-farm and non-farm activity.

The number of oxen possessed was adversely influenced the likelihood of diversifying livelihood. On the opposite hand, farmers having more number of oxen are less likely to diversify livelihood than less number of oxen (Ofolsha and Mansingh, 2015; Gecho, 2017) ^[40, 28].

The income of family units is one of the factors motivating interest in livelihood diversification. Those family units who get more compensation can fulfill their monetary prerequisites for inputs and found to require an intrigued more in livelihood diversification Tukela (2019) ^[46]. Total annual cash income influences household livelihood diversification positively (Gecho, 2017; Yizengaw *et al.*, 2015; Asfir, 2016) ^[28, 53, 15]. Subsequently, families having large cash income were more likely to diversify livelihood into non/off-farm activities. The possible reason is that those farmers who have adequate wage sources can overcome financial imperatives to lock in in elective income-generating exercises (Gecho, 2017; Yizengaw *et al.*, 2015; Asfir, 2016) ^[28, 53, 15]. This is due to the ease of meeting consumer needs, the potential for need-pull livelihood effects and other family needs (Asfir, 2016) ^[32, 15].

The benefit of access credit was found to have a positive impact on livelihood diversification. Thus, lending to a property-poor farmer would improve livelihoods (Debele and Desta, 2016; Anshiso and Shiferaw, 2016; Mentamo and Geda, 2016) ^[20, 12, 38]. On the other hand, obtaining credit benefits had a negative impact on livelihood diversification because farmers may be inclined to purchase fertilizers to improve agricultural production and efficiency rather than diversify their livelihoods (Asfir, 2016) ^[15].

The use of modern fertilizers has been found to have a positive and critical effect on home livelihood diversification (Tamerat, 2016) ^[43]. In contrast, fertilizers use negatively influential livelihood diversification because the use of fertilizers allows a farm family to access more nutrients for production and efficiency and earn higher incomes to meet their family needs (Asfir, 2016) ^[15].

Access of irrigation had positive and significant influence on the involvement of households in livelihood activities (Derbe, 2020) ^[21]; Alemayehu, *et al.*, 2018; Bereket, *et al.*, 2018) ^[60, 17]. The farmer who participated in the irrigation practice may have improved his life by earning a higher income (Ambachew & Ermiyas, 2016) ^[11].

Distance to the main road negatively correlated with the livelihood diversification activities Ambachew & Ermiyas (2016) ^[11]; Asfaw, *et al.*, (2017) ^[14] (Derbe, 2020) ^[21]. This thought us that the distance from the main asphalt road increase the probability of smallholder farmers engagement in farm and off farm and non-farm livelihood activities have decreased. Since access to road is an essential infrastructure required for diversified inputs and livelihood activities. Generally the households at proximity to the road would like to choose livelihood diversifications strategies.

Anshiso and Shiferaw (2016) ^[12] revealed that remittance-receiving positively determined livelihood diversification. Food for work (security net) additionally positively decided the livelihood expansion (Mentamo and Geda, 2016) ^[38].

Conclusion and Policy Implication

Current work has been conducted to review the factors affecting livelihood diversification in Ethiopia, with a special focus on the situation of small holder farmers. For this purpose, the works of various scholars on factors affecting the livelihood diversification of rural smallholders in the country were reviewed. Recent analysis in different parts of the Ethiopian region deals with current analysis and descriptive analysis of strategies for livelihood diversification. Livelihood diversification strategies in Ethiopia were on-farm, off-farm, and off-farm. However, farm livelihood activities are the most practical livelihood strategies and less focused on farm and non-farm. This indicates that activities on the farm are still playing a greater role in livelihood diversification. However, a handful of researchers have no information on clear and cut differences between unarmed and off-farm strategies, and they do not have a clear classification of livelihood diversification strategies. On the other hand, the determining factors affecting livelihood diversification in rural areas of the country were gender, age, family size, educational status, access to credit service, remittance, farmer association membership, and gross annual income had a significant positive relationship with farmers' livelihood diversification. In contrast, the size of the land, the age of the head of the family, the agro-ecology, the use of fertilizers, the number of oxen, the tropical livestock units, access to training, access to extension services, the dependency ratio showed significant negative correlation with the livelihood diversification of farmers.

Based on the findings of the reviewed literature, the following points are suggested as options for tackling factors affecting livelihood diversification in Ethiopia.

In the most part of Rural Ethiopia, on-farm livelihood activities were the most practical livelihood strategies with

less attention off-farm and non-farm, so farmers should be encouraged to engage off-farm and non-farm activities, to retain their standard of living.

However, most studies do not contain more detailed information about each diversification strategy rather than generalize to livelihood diversification strategies. Therefore, it's better if the researchers focus on classification of various types of livelihood diversification strategies.

Further studies should be conducted to fill the information gap on the factors of rural Livelihood Diversification. Besides, policy makers need to formulate and approve appropriate rural development policies and strategies based on the current situation of rural livelihoods in order to enhance the development of the rural community.

Most of scholars stated that size of the land, the age of the head of the family, the agro-ecology, the use of fertilizers, the number of oxen, the tropical livestock units, access to training, access to extension services and dependency ratio negatively affect livelihood diversification among smallholder farmers. Thus, to allow live desirable livelihoods, the policy of diversification should take into account access to agricultural land, support for storage and expansion, capacity of small holder farmers through agricultural training, improvement of services, focus on family planning, and access to extension service.

References

1. Aababbo Y, Sawore A. Assessing Determinant Factors of Income Diversification among Rural Farm Households in Ethiopia: The Case of Leemo and Anileemo Districts, Hadiya Zone, South Nation Nationalities People Region. *International Journal of Science and Research (IJSR)*. 2016;5(12):100-110
2. Addisu Y. Livelihood strategies and diversification in western tip pastoral areas of Ethiopia. *Pastoralism*. 2017;7:9.
3. Adem M, Tadele E, Mossie H, Ayenalem M. Income diversification and food security situation in Ethiopia: A review study. *Cogent Food & Agriculture*. 2018;4(1):513354.
4. Adugna E, Wagayehu B. Causes of Household Food Insecurity in Wolaita. Full Length Research Paper. *Journal of Stored Products and Postharvest Research*. 2012;3(3):35-48.
5. Adugna E, Wagayehu B. Determinants of livelihood strategies in Wolaita, southern Ethiopia. *Agricultural Research and Reviews*. 2012;1(5):153-161.
6. Teshome Y, Negussie B. Challenges and prospects of climate change and agricultural land management practices in Ben Seshangul Gomez region Asosa zone, North West, Ethiopia. *Int. J Agric. Food Sci*. 2021;3(1):14-20. DOI: 10.33545/2664844X.2021.v3.i1a.45
7. Alemu ZG, Oosthuizen LK, Van Schalkwyk HD. Agricultural development policies of Ethiopia since 1957. University of the Free State, 2010.
8. Aloba Loison S. Rural livelihood diversification in sub-Saharan Africa: a literature review. *The Journal of Development Studies*. 2015;51(9):1125-1138.
9. Aloba Loison SH. Survival options, processes of change and structural transformation: Livelihood diversification among smallholder households in rural Sub-Saharan Africa (Doctoral dissertation, Lund University), 2017.
10. Amare D, Belaineh L. Determinants of income diversification among rural households: The case of smallholder farmers in Fedis district, Eastern hararghe zone, Ethiopia. *Journal of Development and Agricultural Economics*. 2013;5(3):120-128.
11. Ambachew MD, Ermiyas A. Determinants of Rural Household Livelihood Diversification Strategy in South Gondar Zone, Ethiopia. *Journal of Agricultural Economics, Extension and Rural Development*. 2016;4(8):548-560.
12. Anshiso D, Shiferaw M. Determinants of Rural Livelihood Diversification: The Case of Rural Households in Lemmo District, Hadiyya Zone of Southern Ethiopia. *Journal of Economics and Sustainable Development*. 2016;7(5):32-39.
13. Arega B, Woldeamlak B, Melanie N. Rural households' livelihood assets, strategies and outcomes in drought-prone areas of the Amhara Region, Ethiopia: Case Study in Lay Gaint District. *Afr. J. Agric. Res*. 2013;8(46):5716-5727.
14. Asfaw A, Simane B, Hassen A, Bantider A. Determinants of non-farm livelihood diversification: evidence from rainfed-dependent smallholder farmers in northcentral Ethiopia (Woleka sub-basin). *Development Studies Research*. 2017;4(1):22-36.
15. Asfir S. Determinants of Rural Households Livelihood Strategies: Evidence from Western Ethiopia. *Journal of Economics and Sustainable Development*. 2016;7(15):103-109
16. Babatunde RO. On-farm and Off-farm works: Complement or Substitute? Evidence from rural Nigeria, 2013, (No. 309-2016-5247).
17. Bereket, T. H., Filmon, H., & Meseret, L. (2018). Factors Affecting Rural Farm Household Livelihood Strategies; A case of Demba Gofa District, Gamo Gofa Zone, Southern Ethiopia. *Journal of Pesticides and Biofertilizers*, 1-7.
18. Dadi W. Livelihood Diversification as Household Strategies. A Case Study of Rural Kebeles around Gelan Town, Oromia, Ethiopia. Thesis MA in Geography and Environmental Studies Addis Ababa University, Addis Ababa, Ethiopia, 2016.
19. Davidson E, Goldstraw K, Packham C. "Sustainable Livelihoods Analysis" An Exploration of the effects of Austerity, 2016.
20. Debele B, Desta G. Livelihood diversification: strategies, Determinants and Challenges for Pastoral and Agro-Pastoral Communities of Bale Zone, Ethiopia. *International Review of Social Sciences and Humanities*. 2016;11(2):37-51.
21. Derbe T. Determinants of Smallholder Farmers' Livelihood Strategies in Wogera District of Ethiopia. *The Ethiopian Renaissance Journal of Social Science and Humanities*. 2020;7(1):106-116.
22. Ellis F. *Rural Livelihoods and Diversity in Developing Countries*. Oxford: Oxford University Press, 2000.
23. FAO. *The State of Food Insecurity in the World 2015. Meeting the 2015 International Hunger Targets: Taking Stock of Uneven Progress*; FAO: Rome, Italy, 2015, 1-62.
24. Fikremarkos MB. Ethiopia's World Trade Organization accession and maintaining policy space in intellectual property policy in the agreement on trade-related

- aspects of Intellectual Property Rights Era: A preliminary look at the Ethiopian patent regime in the light of the agreement on trade-related aspects of intellectual property rights obligations and flexibilities. *The J. of World Intellectual Property*. 2012;15(3):171-198.
25. Gautam Y, Andersen P. Rural livelihood diversification and household well-being: Insights from Humla, Nepal. *Journal of Rural Studies*. 2016;44:239-249.
 26. Gebreyesus B. The Effect of Livelihood Diversification on Household Income: Evidence from Rural Ethiopia. *International Journal of African and Asian Studies*. 2016;20(1):1-12.
 27. Gebru GW, Ichoku HE, Phil-Eze PO. Determinants of livelihood diversification strategies in Eastern Tigray Region of Ethiopia. *Agriculture & Food Security*. 2018;7(1):62.
 28. Gecho Y. Rural Farm Households Income Diversification: The Case of Wolaita Zone, Southern Ethiopia. *Social Sciences*. 2017;6(2):4556.
 29. Oparaojiaku JO, Ekumankama, Ifenkwe GN. Rural livelihood activities/services performed by community based women organization (CBWOs) in Imo and rivers states, Nigeria. *Int. J Agric. Extension Social Dev*. 2021;4(1):06-09.
 30. Idris M. Womens Workload and Their Role in Agricultural Production in Ambo District Ethiopia. *Journal of Development and Agricultural Economics*. 2014;6(8):356-362.
 31. Kassa WA. Determinants and challenges of rural livelihood diversification in Ethiopia: Qualitative review. *Journal of Agricultural Extension and Rural Development*. 2019;11(2):17-24.
 32. Kassie GW, Kim S, Fellizar Jr FP. Determinant factors of livelihood diversification: Evidence from Ethiopia. *Cogent Social Sciences*. 2017;3(1):1369490.
 33. Kebede M, Haileselassie A, Haile M, Luchia T. Livelihood diversification strategies among men and women rural households: Evidence from two watersheds of Northern Ethiopia. *Journal Agricultural Economic Development*. 2014;3(2):017-025.
 34. Kebede M, Haileselassie A, Gebrehiwot H, Luchia T. Livelihood Diversification Strategies among Men and Women Rural Households: Evidence from two watersheds of Northern Ethiopia. *Journal of Agricultural Economics and Development*. 2014;3(2):17-25.
 35. Khatun D, Roy BC. Rural livelihood diversification in West Bengal: determinants and constraints. *Agricultural Economics Research Review*. 2012;25(347-2016-16910):115-124.
 36. Mengistie D, Kidane D. Assessment of the Impact of Small-Scale Irrigation on Household Livelihood Improvement at Gubalafto District, North Wollo, Ethiopia. *Agriculture*. 2016;6:27.
 37. Mengistu S. Challenges of Livelihood Diversification in Pastoral Lands of Ethiopia: Evidence from South Omo Pastoralists. *International Journal of Scientific and Technology Research*. 2016;5(9):147153.
 38. Mentamo M, Geda N. Livelihood diversification under severe food insecurity scenario among smallholder farmers in Kadida Gamela District, Southern Ethiopia. *Kontakt*. 2016;18(4):289-295. <http://dx.doi.org/10.1016/j.kontakt.2016.09.003>
 39. Mohammed K, Tolossa D. Contribution of remittance to the improvement of rural household's livelihoods: the case of Tehuledere Woreda, Northeastern Ethiopia. *Journal of Development and Agricultural Economics*. 2016;8(10):228-240.
 40. Ofolsha M, Mansingh J. Determinants of Female-headed Households' Diversification Strategies Choice in Ambo District, Ethiopia. *Journal of Extension Education*. 2015;27(2):5424-5430.
 41. Mengistu Meresa. The role of agricultural extension service on agricultural development: The case of Walayta Sodo Zuria District, Ethiopia. *Int. J Agric. Extension Social Dev*. 2020;3(1):07-13.
 42. Seid SA. Determinants of Rural Households Livelihood Strategies: Evidence from Western Ethiopia. *Journal of Economics and Sustainable Development*. 2016;7(15):103-109. https://www.researchgate.net/publication/321377153_
 43. Tamerat T. Livelihood Resources and Determinants in Tigray Region of Ethiopia. *International Journal of Lean Thinking*. 2016;7(2):57-66.
 44. Tenaw Z. Constraints of Pastoral and Agro-pastoral Livelihood Diversification in Eastern Ethiopia: The Case of Mieso District, Oromia Regional State. *International Journal of Sciences Basic and Applied Research (IJSBAR)*. 2016;26(3):267-274.
 45. Tesema D, Berhanu A. Rural Livelihood Strategies and Household Food Security of Farmers Surrounding Derba Cement Factory, Oromia Region, Ethiopia. *Rural Sustainability Research*. 2018;40(335):2-17.
 46. Tukela B. Analysis of livelihood diversification practice to promote rural households food security: The case of Hawassa Zuria District of Sidama Zone, Ethiopia. *Journal of Development and Agricultural Economics*. 2019;11(1):1-8.
 47. United Nations Development Program (UNDP). Guidance note on recovery: livelihood, 2010.
 48. Weldegebriel ZB, Prowse M. Climate-change adaptation in Ethiopia: to what extent does social protection influence livelihood diversification? *Development Policy Review*. 2013;31:o35-o56.
 49. Wondimagegnhu BA, Huluka AT, Nischalke SM. Determinants of farm livelihoods of smallholder farmers in Yayu biosphere reserve, SW Ethiopia: a gender disaggregated analysis. *Cogent economics & finance*. 2019;7(1):1645583.
 50. Yenesew S, Eric N, Fekadu B. Determinants of livelihood diversification strategies: The case of smallholder rural farm households in Debre Elias Woreda, East Gojjam Zone, Ethiopia. *African Journal of Agricultural Research*. 2015;10(19):1998-2013.
 51. Bassim Haleem Kshash, Hayat Kadhum Oda. Challenges facing extension agents in Iraq. *Int. J Agric. Extension Social Dev*. 2021;4(1):58-65.
 52. Yishak G, Ayele G, Lemma T, Alemu D. Rural household livelihood strategies: Options and determinants in the case of Wolaita Zone, Southern Ethiopia. *Social Sciences*. 2014;3(3):92-104.
 53. Yizengaw S, Okoyo E, Fekadu B. Determinants of livelihood diversification strategies: The case of smallholder rural farm households in Debre Elias Woreda, East Gojjam Zone, Ethiopia. *African Journal of Agricultural Research*. 2015;10(19):1998-2013.

54. Yona Y, Mathewos T. Assessing challenges of non-farm livelihood diversification in Boricha Woreda, Sidama zone. *Development. Agricultural Economic*. 2017;9(4):87.
55. Kassa GM, Arowojolu AO, Odukogbe AA, *et al.* Prevalence and determinants of adolescent pregnancy in Africa: A systematic review and Meta-analysis. *Reprod Health*. 2018;15:195. <https://doi.org/10.1186/s12978-018-0640-2>
56. Tilahun *et al.* Pastoralism: Research, Policy and Practice *Pastoralism: Research, Policy and Practice*. 2017;7:2. DOI 10.1186/s13570-016-0074-9.
57. Yishak G, *et al.* Livelihood Strategies and Food Security of Rural Households in Wolaita Zone, Southern Ethiopia. *Journal of Developing Country Studies*, ISSN 2224-607X (Paper) ISSN 2225-0565, 2014;4(14).
58. Helmy I. Livelihood diversification strategies: Resisting vulnerability in Egypt (No. 441). GLO Discussion Paper, 2020.
59. Scoones. Sustainable Rural Livelihoods: a framework for analysis. IDS Working Paper no. 72, Brighton: Institute for Development Studies, 2000.
60. Alemayehu M, Beuving J, Ruben R. Risk Preferences and farmers' livelihood strategies: a case study from Eastern Ethiopia. *J. Int. Dev.* 2018;30:1369-1391.