

Review

Determinants and challenges of rural livelihood diversification in Ethiopia: Qualitative review

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The review was made on determinants and challenges of livelihood diversification in Ethiopia. Different published and unpublished documents were collected through different search engines from different databases, Google scholar and Google. After thorough reading, 42 papers were used to review out of 182 papers. There are a lot of pushes and pull factors that affect rural livelihood diversification. Some determinants, which affect rural community were human, financial, social, natural, and physical capitals/assets. Lack of capital, poor infrastructures, lack of access to credit service, lack of access to market and marketing service and farmland scarcity were some of challenges that face rural household to diversify their livelihood. The major limitations of the studies were lack of consistence on terminology of livelihood diversification strategies, generalization during identification of factors affecting livelihood diversification and unable to reason out econometric model results. Therefore, further investigations should be conducted and development practitioners should pay attention to those factors affecting livelihood diversification.

Key words: Determinants, diversification, livelihood, rural, strategies.

INTRODUCTION

Developing countries like Ethiopia heavily depend on small-scale agriculture with low productive and vulnerable to weather and production-related shocks (Bezabih et al., 2014). In most region of sub-Saharan Africa, there is upsurge of mean temperature and greater variability of rainfall patterns (IPCC, 2007). In Ethiopia subsistence farming, limited arable land and low agricultural productivity compel individuals or households to diversify livelihoods (Lemi, 2009). Farmers' in Sub-Saharan Africa participate in livelihood diversification activities to increase households' income accumulation and to maintain

livelihoods facing from increasing climatic and economic risks (Echebiri et al., 2017; Prowse, 2015).

Diversification is norm in which individuals and households diversify assets, incomes, and activities due to push factors to reduce risk and pull factors for 'realization of strategic complementarities between activities' (Barrett et al., 2001). Strategy household livelihood diversification was used to curtail risk and uncertainty (Sharma, 2010). Livelihood diversification is the process of carrying out activities by rural household to survive and improve their standard of living (Weldegebriel

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and Prowse, 2013). Ellis (1998) also defines livelihood diversification as process in which rural communities build various portfolios of activities and social capabilities to survival and improve their standard of living. Diversification of livelihoods is a strategy to cope with economic, environment shock, and an instrument to ease poverty. However, unequal distribution of household resource and asset force them to diversify into a high return sector (to enhance their wellbeing), and low return sector (Gautam and Andersen, 2016). Nevertheless, diversification can have both positive and negative impacts on rural household's livelihoods. Its impact is positive when households are more secure and reduce adverse impact of seasonality (Weldegebriel and Prowse, 2013); but it can result in negative effect when it raise households vulnerability for different risks (Ellis, 1998).

Like other world, rural people in Ethiopia diversify their asset, income and activity due to push and pull factors. They diversify their livelihood through on farm, nonfarm, and off farm income generating activities. On farm income is income generated from crop and livestock on owners farming whether on owner occupied land or leased land (Weldegebriel and Prowse, 2013), and off-farm income is temporary wage or exchange labour on others farms within agricultural sector (Ellis, 1998, 2000). Besides they diversify their livelihood through non-farm income which is income generated from activities in secondary and tertiary sectors (Barrett et al., 2001) or income from non-agricultural activities such as rents, food and drink processing, remittance, etc (Ellis, 2000).

As country level, Asfaw (2018) carried out a review on "determinants of sustainable rural livelihood diversification of small holder farmers in Ethiopia". Nevertheless, Sisay (2013) and Sarah (2015) review on "Rural livelihood diversification" in some Africa countries and sub-Saharan Africa, respectively. Hence, review made on determinants and challenges of rural livelihood diversification in context of country level were few. However, there were many studies conducted in relation to the topic but lacks consistency of livelihood diversification strategies, and there was no single study conducted as country level. So that the review of the paper tried to compile studies conducted in different part of the country to show real image about livelihood diversifications and contribute knowledge on determinants and challenges of rural livelihood diversification strategies. The aims of the review were to: (1) Identify livelihood diversification strategies and (2) Review determinant and challenges of rural livelihood diversification strategies. The result generated through review may be important for development practitioners, researchers and policy makers. The result of review paper may be helpful for development practitioners who work on livelihood improvement of rural people through indicating in what issue they should intervene. For researchers it may give insight on how they should conduct research to fill gap of different studies and to make community beneficiary

through generating relevant information by their investigation. Besides it may also be crucial for policy makers to formulate, ratify and implement appropriate policy successfully based on existing situation of rural livelihoods.

METHODOLOGY

Timetable of data, search strategy of published as well as unpublished papers and different search-terms/engines to prevent junk of literature sources were important consideration to review paper. Besides, Google and Google scholar databases like Science direct, Scopus, Pubmed, Index Copernicus, WorldCat and ScinceOpen were used to gather potentially relevant work for the topic. The search engines used to collect published and unpublished works were challenges of rural livelihood diversification in Ethiopia, determinants of rural livelihood diversification strategies in Ethiopia, rural livelihood diversification strategies in Ethiopia, and livelihood diversification strategies. Through all the search, 182 published and unpublished papers were collected. Only 42 published and unpublished papers were considered to review the paper. Decision to include or exclude particular studies was made based on recent, relevance for the review topic and data type, that is, qualitative data. At last, all collected data were analyzed through narration and interpretation qualitatively.

RESULTS AND DISCUSSION

Rural livelihood diversification strategies in Ethiopia

According to Ellis (2000), livelihood activities can be categorized into three namely on farm, nonfarm and off farm. On farm activities are activities, which are directly related with agricultural 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, transfers, and remittances. Off-farm activities refer to agricultural activities which take place outside the person's own farm agricultural wage or exchange labor and natural resource extraction (mainly charcoal making).

In Ethiopia, most of the studies conducted identify three rural livelihood diversification strategies: on farm, nonfarm and off farm (Mengistie and Kidane, 2016; Debele and Desta, 2016; Gecho, 2017; Kassie et al., 2017; Teklu et al., 2017; Yona and Mathewos, 2017; Ofolsha and Mansingh, 2015; Dadi, 2016; Asfir, 2016; Addisu, 2017; Yizengaw et al., 2015). Authors mention crop production and livestock rearing as major activities of on farm livelihood activities. Based on the type of jobs, Addisu (2017) classifies livelihood strategies into six such as farming, breeding, fishery, trading, employment, and craftsman. According to Wondimagegnhua et al. (2016), livelihood diversification strategies were on farm (crop and livestock production) and nonfarm.

According to Tenaw (2016) and Mengistu (2016), major livelihood diversification activities were crop and livestock

production, petty trading and remittance. Also making charcoal, daily laborer, contraband trading (Tenaw, 2016), wage and handcraft (Mengistu, 2016) were livelihood diversification activities. However, Tenaw (2016) and Mengistu (2016) lack detail and plain difference among livelihood activities. Nonfarm and off farm livelihood strategies of the agro-pastoralists were livestock trade, casual labor, and remittances (Tilahun et al., 2017).

Off-farm activities were activities, which were done to someone else's farm such as wage labor, natural resource based activities like firewood/grass and charcoal selling (Yizengaw et al., 2015; Ofolsha and Mansingh, 2015; Asfir, 2016; Dadi, 2016; Yona and Mathewos, 2017; Gecho, 2017). Nevertheless, farmers move to other area to work as wage laborer due to fear of negative attitude of the community (Yona and Mathewos, 2017). The off farm activities in which rural communities participate were petty/local trading, remittance, handicrafts, selling wood and wood products (firewood and charcoal) (Mengistie and Kidane, 2016; Debele and Desta, 2016). Some other off farm activities were selling local drinks (*Tela, Areki*); transporting people and goods by using carts; salary from temporary or permanent employment; renting out of the idle or extra oxen; and income from mills (Mengistie and Kidane, 2016), daily laborer and aid (Debele and Desta, 2016). They did not identify nonfarm activities. However, Mengistie and Kidane (2016) and Debele and Desta (2016) did not distinguish off farm and nonfarm activities.

Non-farm activities include petty trade, handicraft (weaving, spinning, carpentry, house mudding, poet making) (Yizengaw et al., 2015; Ofolsha and Mansingh, 2015; Asfir, 2016; Dadi, 2016; Yona and Mathewos, 2017; Gecho, 2017) and remittance (Yizengaw et al., 2015; Dadi, 2016; Yona and Mathewos, 2017; Gecho, 2017). Selling of local drinks (*Tella* and *Areke*) (Yizengaw et al., 2015; Dadi, 2016; Ofolsha and Mansingh, 2015; Gecho, 2017) and rent of pack animal like donkey for transportation (Gecho, 2017; Yona and Mathewos, 2017) were nonfarm activities. Nonfarm livelihood activities in which farmers engage were renting (hiring) of oxen and land (Yona and Mathewos, 2017) and wage labor (Ofolsha and Mansingh, 2015; Dadi, 2016; Asfir, 2016). In addition, selling of unskilled labor force and prostitution (Ofolsha and Mansingh, 2015), mining (Asfir, 2016), trading of small ruminants and cattle (Yizengaw et al., 2015) were nonfarm livelihood sources for smallholder farmers. According to Yishak et al. (2016), non-farm livelihood activities were daily labor, local brewery, formal and non-farm employment, firewood and charcoal sale, food preparation and sale, carpentry, transportation of produces, sand extraction and sale. But Yishak et al. (2016) merge off farm and nonfarm activities. The major limitations of the studies conducted in rural livelihood diversification strategies in Ethiopia were unable to distinguish nonfarm and off activities and generalization of livelihood activities rather than classifying them based

on livelihood diversification strategies.

Determinants of rural livelihood diversifications in Ethiopia

In Ethiopia, different determinants of rural livelihood diversification strategies were identified. Those determinants were classified into five types of livelihood assets/capitals, namely, human, financial, social, natural, and physical capital. Various scholars distinguish different determinant factors, which influence livelihood diversification strategies based on their inferential statistics results. Nevertheless, some of the scholars did not reason out why different determinants affect farmer's livelihood diversification. Therefore, the review paper discusses diverse determinants as human, financial, social, natural, and physical capital.

Natural capital

Natural capital is a natural assets stocks (land, soil, water, air, genetic resources, etc.) and environmental services (hydrological cycle, pollution sinks, etc.) from which livelihoods are derived (Scoones, 2000). Natural capital that determine livelihood diversification strategies was farmland, area of the study (agro-ecology) and nature of settlement of the household head.

Land size

Farmland size had negative impact on livelihood diversification strategies (Tamerat, 2016; Ofolsha and Mansingh, 2015; Idris, 2014; Degefa, 2005; Gecho, 2017; Anshiso and Shiferaw, 2016; Aababbo and Sawore, 2016; Mentamo and Geda, 2016; Yizengaw et al., 2015). Hence, the probability of engaging in various livelihood strategies decreases when land holding size of household increases because farmers with larger farm land size were encouraged to involve more on farming activities (Tamerat, 2016; Gecho, 2017; Aababbo and Sawore, 2016). In addition, the farm households having more land size were forced to follow agricultural extensification rather than diversification (Anshiso and Shiferaw, 2016; Yizengaw et al., 2015).

According to Ofolsha and Mansingh (2015), female-headed households (FHH) having large land size have probability of increasing product through farming to improve their livelihood, consequently they reduce livelihood diversification strategies. Similarly, studies conducted by Idris (2014) and Tolossa (2005) revealed that farmers having large plot of land have less livelihood diversifier. However, finding of Kebede et al. (2014) indicated that farmland size had positive effect on livelihood diversification since households with better holding have additional income in casual laborer works to smoothen their farm operations.

Area of the study (agro-ecology) has direct relationship

with livelihood diversification. Drier and fragile environment push household to low return and high-risk activities (Ofolsha and Mansingh, 2015). According to the Asfir (2016), households' nature of settlement influenced livelihood diversification strategy positively since farmers' land fragmentation and small size of holding; force them to diversify their livelihood.

Human capital

Human capital is skills, knowledge, ability to work and good health important for the successful pursuit of livelihood strategies (Scoones, 2000). Alternatively, human assets are the human skills, knowledge, levels of education, and capacity to contribute to improve their livelihood (Davidson et al., 2014). The major human capital determinants of livelihood diversification were sex, age, family size, educational level, agricultural extension visits and access to training.

Sex

Sex of the sample respondents had positively affected farmer's livelihood diversification strategies. Male sample respondents had better livelihood diversification option than female. This implies that female farmers were less likely to diversify livelihood than male-headed households. The authors explained those female head households had more responsibility in the house and traveling for searching nonfarm and off activity from urban area was culturally unacceptable (Demissie and Legesse, 2013; Debele and Desta, 2016; Gecho, 2017; Aababbo and Sawore, 2016). Opposing this result, Yizengaw et al. (2015) revealed that sex of sample respondents had negatively affected farmer's livelihood diversification strategies. Hence, female household head were better diversifier than male household head since they participated in nonfarm activities through renting their land for sharecropping.

Age

Age of the household head had a negative effect on livelihood diversification (Asfir, 2016; Kassie et al., 2017). As age of household head increases, the farmer will be getting older and could not be capable of diversifying and more likely to concentrate on farm activities for their subsistence. Less access to land to youngster population and increase in service and construction sectors in Ethiopia have better opportunity for youngsters than old farmers to diversify livelihood activities (Kassie et al., 2017). According to the Asfir (2016), age affects livelihood diversification negatively since older farmers were well established, more experienced in agricultural production, more resistant to new ideas and information hence less likely to diversify their livelihood. According to Debele and Desta (2016), age of household head had

found a positive effect on livelihood diversification strategies because experience increases with age, and help to diversify livelihood strategies.

Family size

Family size was one of the positively affecting livelihood diversification (Asfir, 2016; Tamerat, 2016; Mentamo and Geda, 2016). This is due to the presence of large families to practice multiple activities as household laborer to diversify their livelihood strategies.

Educational level

Education level influenced positively the households' livelihood diversification (Demissie and Legesse, 2013; Gecho, 2017; Debele and Desta, 2016; Tamerat 2016; Aababbo and Sawore, 2016; Mentamo and Geda, 2016). This is due to probability of educated person ability to gain better skill, experience, knowledge and capability to find a job (Demissie and Legesse, 2013; Gecho, 2017). In lined with these, educated person had better ability to diversify livelihood strategies since they may have better skill, experience and knowledge (Debele and Desta, 2016). Nevertheless, Tamerat (2016) lacks detail information why education level had positive effect on farmer's livelihood diversification. According to Kassie et al. (2017), educational level of farm household had found a negative impact on livelihood diversification since educated farmers may be better specialized in on-farm activities by employing better farm technologies.

Agricultural extension visit

Agricultural extension visit was negatively affected livelihood diversification. Farmers having more contact with extension agent had better probability of livelihood diversification (Tamerat, 2016; Asfir, 2016). This may be due to the fact that farmers having better extension contact have better access to agricultural information and technical assistance on agricultural activities to increase production and productivity (Asfir, 2016). However, other studies revealed that frequency of visit by development agents had positive impact on livelihood diversification (Anshiso and Shiferaw, 2016).

Access to training

It was found out that to have a negative effect on livelihood diversification since trained farmers have better skills, knowledge and experiences to improve agricultural production and productivity for fulfilling their family requirements (Yishak et al., 2014; Asfir, 2016).

Social capital

Social capital is social assets such as networks, social

relations, associations, etc (Scoones, 2000). According to the review made, membership in cooperative, urban linkage, farmer's association membership and secure land right were social capital, which affects farmer's livelihood diversification.

Farmer's association membership

Farmer's association membership was found to have a positive and significant impact on household's livelihood diversification (Tamerat, 2016). The institutional factors like secure land right and being membership in cooperatives had direct relation with livelihood diversification strategies. Farmers having secure land right will have better diversification to agriculture, agro forestry and rent-out their land. Also being membership of cooperative may decrease households' financial constraint, increase in social capital and entrepreneur skill and increase in the bargaining power of farmers in selling and buying their products (Kassie et al., 2017). Also, cooperatives provide better option to promote sharing of knowledge, information, experience regarding different livelihood diversification and means for obtaining different employment opportunities (Asfir, 2016).

Leadership is positively determining the livelihood diversification. This may be due to leaders have more access for information, share more experience with others in social environment, create more social network with outside societies and get more access to formal as well as informal credits (Gecho, 2017). Linkage with urban people had positive effect on livelihood diversification since it may improve access to information, which is important to livelihood diversification (Yizengaw et al., 2015).

Financial capital

Financial or economic capital is cash, credit/debit, savings, infrastructure, and other economic assets (Scoones, 2000) or financial assets are organizational income, access to credit, grants or savings (Davidson et al., 2014). Financial capital that determine livelihood diversification includes oxen ownership, access to credit facilities, annual farm income, tropical livestock unit, food for work and remittance receiving.

Tropical livestock unit (TLUs)

Tropical livestock unit (TLUs) had negative effect on livelihood diversification (Ofolsha and Mansingh, 2015; Yizengaw et al., 2015; Debele and Desta, 2016; Gecho, 2017). Hence, farmers with large number of tropical livestock unit were less likely to diversify livelihood than those who own small number of TLUs due to better opportunity to earn more income from livestock

production (Gecho, 2017; Yizengaw et al., 2015). They may also have less intention to non/off farm activities diversification (Debele and Desta, 2016). According to Asfir (2016), it had positive effect on livelihood diversification because farmers having more number of TLU had more money to invest in on farm and nonfarm activity.

The number of oxen owned

The number of oxen owned was negatively influenced the probability of diversifying livelihood. On the other hand, farmers having more number of oxen are less likely to diversify livelihood than less number of oxen (Ofolsha and Mansingh, 2015; Gecho, 2017).

Total annual cash income

Total annual cash income affects household livelihood diversification positively (Gecho, 2017; Yizengaw et al., 2015; Asfir, 2016). Therefore, households 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 income sources can overcome financial constraints to engage in alternative income-generating activities (Gecho, 2017; Yizengaw et al., 2015; Asfir, 2016). This was due to easily meeting of consumption needs, possibility of creating demand-pull livelihood outcomes and other family requirements (Asfir, 2016).

Access to credit service

Access to credit service was found to have a positive effect on livelihood diversification. Hence, providing credit for resource poor farmer will enhance livelihood diversification (Debele and Desta, 2016; Anshiso and Shiferaw, 2016; Mentamo and Geda, 2016). On the other hand, access to credit service had negative impact on livelihood diversification because farmers having access to credit may inclined to purchase fertilizer to improve their agricultural production and productivity rather than diversifying their livelihoods (Asfir, 2016).

Use of modern fertilizers was found to have a positive and significant impact on household's livelihood diversification (Tamerat, 2016). Contrary to this, fertilizer use negatively influenced livelihood diversification because using fertilizer may increase production and productivity of farm family to access more food and generate more income to satisfy their family requirements (Asfir, 2016). According to Anshiso and Shiferaw (2016), remittance receiving positively determined livelihood diversification. Food for work (safety net) also positively determined the livelihood diversification (Mentamo and Geda, 2016).

Table 1. Challenges of rural livelihood diversification in Ethiopia.

Authors	Challenges of rural livelihood diversification
Wondimagegnhua et al. (2016), Yona and Mathewos (2017), Mentamo and Geda (2016), and Tenaw (2016)	Lack of capital
Debele and Desta (2016), Dadi (2016), and Mentamo and Geda (2016)	Lack of access to credit service
Debele and Desta (2016), Yona and Mathewos (2017), Dadi (2016), and Mengistu (2016)	Lack of access to market and marketing service
Asfaw et al. (2017), Yona and Mathewos (2017), Tenaw (2016) and Debele and Desta (2016)	Poor infrastructures (road, electricity, telecommunication and transport problem)
Tenaw (2016) and Yona and Mathewos (2017)	Lack of job opportunities
Tenaw (2016) and Mengistu (2016)	Lack of financial services
Debele and Desta (2016) and Wondimagegnhua et al. (2016)	Farmland scarcity
Debele and Desta (2016)	Agro-climatic condition
Debele and Desta (2016)	Decline in livestock productivity, crop and animal disease
Wondimagegnhua et al. (2016)	Low selling price for commodities produced, high cost of agricultural inputs, diseases and monkey attacks ,superstitious beliefs towards pottery and blacksmith
Yona and Mathewos (2017)	Negative attitude of the society, lack of raw materials, low institutional capacity, lack of time, lack of storage facilities and costly inputs and lack of coordination
Mengistu (2016)	Communal resource administration system and lack of proper extension services
Tesfaw (2015)	Political and economic marginalization, inappropriate development policies climate change and increasing resource competition
Yona and Mathewos (2017), Asfaw et al. (2017), Dadi (2016), Wondimagegnhua et al. (2016) and Tenaw (2016)	Lack of skill and experience, inadequate skill training, lack of technical support, lack of knowledge and lack of awareness

Physical capital

Physical assets are tools and equipments needed to be productive in buildings, space or infrastructure (Davidson et al., 2014). Distance from the nearest market, irrigation water and mass media were physical capitals, which determine rural livelihood diversification.

Market distance

Market distance negatively affected household's income diversification activities (Gecho, 2017; Kassie et al., 2017; Debele and Desta, 2016). As market distance increase from home, farmer's non/off farm income diversification will be discouraged (Gecho, 2017). The farmers having near market possibility to selling-out their labor to the nearest market to maximize their income and to smooth their annual consumption during the slack crop production period, promote the rural-urban linkages, develop the entrepreneurial skill of farm households to diversify their livelihood (Kassie et al., 2017). The result of Aababbo and Sawore (2016) revealed that farmers who reside far from the market center have better

probability of diversifying income source.

Mass media

Mass media are positively related with livelihood diversification strategies because the access to mass media may improve rural households' information on non-farm activities (Yizengaw et al., 2015). In addition, irrigation water had positive relation with farming livelihood diversification (Mulugeta, 2013; Ofolsha and Mansingh, 2015).

Challenges of rural livelihood diversification in Ethiopia

Livelihood diversification in rural area is an important strategy to survive and accumulate asset. However, there are many challenges in Ethiopia to engage in successful livelihood diversification (Tenaw, 2016) and identified in Table 1. Nevertheless, scholars did not clearly show challenges for each livelihood diversification strategies.

CONCLUSION

Livelihood diversification strategies in Ethiopia were on farm, nonfarm and off farm. However, on farm livelihood activities were the most practiced livelihood strategies. Nevertheless, some of the scholars lack information regarding to clear and cut difference between nonfarm and off farm strategies and also they lack clear classification of livelihood diversification strategies. Based on their inferential statistics results, various scholars distinguish different determinans, which affect livelihood diversification. Some determinants that affect rural livelihood diversification were land holding size, sex, age, education level, agricultural extension visit, farmers association, access to credit and market distance. However, there were contradictory findings on determinants of livelihood diversification. In addition, some of the scholars did not reason out model outputs on livelihood diversification. Some of the major challenges which affect rural livelihood diversification were lack of capital, poor infrastructures, lack of access to credit service, lack of access to market and marketing service, lack of job opportunities and farm land scarcity. However, most of the studies lack detail information on each diversification strategies rather than generalization on livelihood diversification strategies. Therefore, governmental and nongovernmental organizations should give attention for rural livelihood improvement through providing information regarding to marketing, extension and credit services. Further studies should be conducted to fill information gap on determinants and challenges of rural livelihood diversification. Besides, policy makers should formulate and ratify appropriate rural development policies and strategies based on existing situation of rural livelihood to boost development of the rural community.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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