

Moving Beyond the Sustainable Livelihood Rhetoric: A Conceptual Model of Rural Livelihood Sustainability

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Abstract

The sustainable livelihood concept, with associated diverse frameworks do not explicitly show how to measure livelihood sustainability. Drawing insights from literature, this study aims to develop a conceptual model, which in addition to providing integrated understanding of livelihood sustainability, allows for measurement with special application to rural households. The study argues that the sustainability of any livelihood activity is predicated on four critical factors; (1) the viability level of the activity; thus the activity has to be economically beneficial to enhance the long term sustenance, (2) asset base; thus asset endowment has to be adequate and diverse enough to mitigate the effects of shocks and stresses, (3) vulnerability; the exposure to both internal and external shocks has to be minimal, and (4) ecological impacts; thus the activity has to be in harmony with the natural environment, meaning that the environmental impacts of the activity need not be detrimental. The model illustrates multifunctional rural system, and has the potential to measure rural well-being over time. It is a readily tool to guide policy makers in formulating appropriate sustainable livelihood policies and strategies. In addition, it has universal application attribute. The study recommends two things; empirical application of the model in different contexts and refinement, where necessary.

Keywords: livelihood; sustainability; conceptual model; household

1. Introduction

Rural livelihoods across the globe are generally known to be highly vulnerable with varying degree of successes. For decades, poverty has been associated with rural landscapes due to the deplorable living conditions in such environments. Statistics has it that the world's total number of people living below the extreme poverty line of \$1 per day declined between 1981 and 2004, from 1,470 million to 969 million, with the percentage of the extreme poor falling from 40% to 18% (Chen and Ravallion, 2007). Latest statistics estimates that still, more than 800 million people across the globe live on less than \$1.25 a day, with majority being the rural poor (UNDP, 2015). Rural poverty is estimated at 51% in agricultural based sub-Saharan Africa countries, 28% in transitional Asia economies, and 13% in developing urbanized economies (Valdez et al., 2011).

The ambitious goal of ending poverty in all its forms by 2030 (Sustainable Development Goal (SDG) 1) (UNDP, 2015) suggests that special attention needs to be given to the poor, especially how to improve their livelihoods toward sustainability. This is especially true as it is said that knowing what people do in rural areas is critical for two reasons; debunking the misconception that rural households are either farmers or all diversified and correcting the erroneous opinion that what people do determines their success in coming out of poverty (World Bank, 2008). These according to the Bank, are not always true, as rural activities are diverse with relative levels of successes. Effective poverty alleviation, it is argued, hinges on improvement in all sources of rural income generating activities (Valdez et al., 2011). In this wise, however, attaining rural livelihood sustainability could be linked to sustainable poverty reduction.

But the question is, how do we measure the sustainability of rural livelihood activities? Drawing insights from sustainable livelihood and multifunctionality literature, this study aims to answer the question by developing a conceptual model to guide in sustainability assessment of rural livelihoods.

2. Rural Livelihood

In an attempt to improve the livelihood conditions of rural people, especially in the developing world, major anti-poverty policy frameworks have been promulgated over the past several decades. Over the past four decades, for instance, rural development was characterised by two agendas; 'a strong emphasis on the environment and the protection of natural resources and a continued focus on macro policy, liberalisation, the role of government in relation to the private sector and the importance of effective public management' (Carney, 1999). This development agenda, it is believed, saw investment of huge sums of money in rural areas, but with counter-productive outcomes. In current, most rural areas across the globe continue to be in deplorable state, with endemic challenges ranging from inadequate public services, poor infrastructure, poor health and education to alarming depletion of natural resources, which in entirety, negatively affect their livelihood streams (Carney, 1999).

Following the structural perspective and neo-Marxism in the 1970s and 1980s, a more actor-oriented

approach emerged in the 1990s (de Haan and Zoomers, 2005). This was the livelihood approach. The new approach comprehensively captures poverty and places emphasis on the marginalized people and their livelihoods (Carney, 1999). This micro-oriented approach sees the attainment of sustainable poverty reduction under the condition that external support works with people in a manner that is consistent with their livelihood activities, and the ability to adapt to new challenges (Carney, 1999; de Haan and Zoomers, 2005). Livelihood studies, it is widely believed, became popularized in the 1990s and the beginning of the millennium as a result of the approach. And it was during same period that the Sustainable Livelihood Framework, which sought to serve as a guide for sustainable livelihood analysis, was introduced by the British governments Department for International Development (DfID) (de Haan, 2012).

The past few decades has seen an unprecedented emergence of disparate livelihood research themes, with popular areas including but not limited to assets (e.g. Bebbington, 1999; Shivakoti and Shrestha, 2005; Chen et al., 2012; Boateng, 2013), livelihood strategies (e.g. Owusu, 2007; Walker et al., 2012), diversification (e.g. Ellis, 1999, 2000; Start and Craig, 2001; Barret et al., 2001; Niehof, 2004), livelihood and resilience (e.g. Marschke and Berkes, 2006), livelihood and space (e.g. McSweeney, 2004; Murray, 2010), livelihood and poverty (e.g. Bebbington, 2000), livelihood and vulnerability (e.g. Hasselberg and Yaro, 2006), livelihood and natural resources (e.g. Nawrotzki et al., 2012) and livelihood and rural development (e.g. Scoones, 2009). These scholarship have culminated into research typology, and Murray (2010), identified three trajectories of livelihood studies; circumspective (looking around), retrospective (backward looking) and prospective (forward looking), with each assessing a dimension of livelihood deemed critical for understanding the embedded activities of rural people, and their quest to attain livelihood sustainability.

Previous studies have contributed in no small way to enrich our understanding on various aspects of rural livelihoods. But a study by Scoones (2009), highlighted some major concerns, which livelihood scholarship has done little. In the study, Scoones pointed out that ‘the term sustainable livelihood implies that livelihoods are stable, durable, resilient and robust in the face of both external shocks and internal stresses. But what stresses and what shocks are important? How is sustainability assessed? And how are future generations’ livelihoods made part of the equation?’ These areas in livelihood research, according to Scoones (2009), are weakly researched. This presupposes that any attempt to assess livelihood sustainability would be a major contribution to livelihood scholarship. This study develops a conceptual model to aid in sustainability assessment of livelihood activities.

3. The Livelihood Approach

Since its introduction in the 1990s, the livelihood approach has guided development discourse and practice across the globe. The approach emerged as a successor to the household strategies studies, which was predominant in the 1980s (Owusu, 2003; Owusu, 2009). The household studies were situated under the broader umbrella of household economics, where emphasis was on land allocation and income strategies. Subsequent studies, on the contrary, assumed the name survival studies and were more socially than economically induced, with special focus on understanding how poor people cope and survive in the face of different kinds of crises (de Haan, 2012). The latter revelation that poor households are excluded from the benefits of economic growth, precipitated a new form of household studies, which sought to approach households from livelihood perspectives. Largely, the latter studies emerged as a result of the disappointing outcomes of the former approaches in devising effective poverty alleviation strategies (de Haan, 2012). The latter approach, in essence, was inspired by the desire to develop more effective poverty alleviation strategies, where the bottom of the pyramid (BOP) will play a major role (Appendini, 2001; Owusu, 2009; de Haan, 2012). Thus the new actor-oriented approach was interested in the world of lived experience; as it recognizes the urgency with which people organize their lives and pays attention to related issues such as poverty, vulnerability and marginalization (de Haan, 2003; Owusu, 2009; de Haan, 2012).

The overwhelming embrace of the approach by development theorists, governments, NGOs and international organisations, it is believed, have contributed to its definitional expansion and focus. As a way of focus, for instance, the United Nations Development Program (UNDP), places emphasis on the role of technology; Oxfam emphasizes the right to a sustainable livelihood; CARE prioritizes livelihoods at the household and put emphasis on livelihood security; the Society for International Development (SID) in Rome’s Sustainable Livelihoods Project focuses on how to increase the effectiveness of grassroots and other kinds of civil society organizations; ‘sustainable livelihoods’ work at the Institute of Development Studies (IDS), in the UK, focuses on the sustainable rural livelihoods frameworks; while the Overseas Development Group at the University of East Anglia concentrates on diversification of livelihood activities (Owusu, 2009). The continuing relevance of the approach is attributed to its ability to comprehensively illustrate the development realities of the poor. To de Haan (1997), the livelihood concept is all about people attempting to meet their basic necessities, while coping with uncertainties and responding to new opportunities. In doing this, however, Scoones (2009) adds that people develop complex portfolio of livelihood activities. To this end, some scholars have argued that

livelihoods, especially in the context of rural areas are complex and dynamic. Most importantly, these attributes have been exemplified in an empirical study (Marschke and Berkes, 2006), and it has been argued that understanding such complexities and dynamism, especially in the local context, is critical in building participatory approaches to livelihood enquiry (Scoones, 2009).

But just like any other major concept, the approach has been criticized on several grounds. For instance, it has been criticized of being good concept only in theory searching (O’Laughlin, 2004). It is also said that it does not make way for the inclusion of different levels of resource accessibility by various social groups. In addition, it has also been criticized of ignoring the contextual cultural practices, which influence social relations of livelihood development (Boateng, 2013; Owusu, 2009). Nevertheless, scholars such as Owusu (2003), believe that its ability to bridge the gap between social and individual levels of analysis, especially in the context of rural areas makes it increasingly desirable.

The normative interpretation by DFID summarises the relevance of the approach: ‘Firstly, the approach is ‘people-centred’, in that the making of policy is based on understanding the realities of struggle of poor people themselves, on the principle of their participation in determining priorities for practical intervention, and on their need to influence the institutional structures and processes that govern their lives. Secondly, it is ‘holistic’ in that it is ‘non-sectoral’ and it recognises multiple influences, multiple actors, multiple strategies and multiple outcomes. Thirdly, it is ‘dynamic’ in that it attempts to understand change, complex cause-and-effect relationships and ‘iterative chains of events’. Fourthly, it starts with analysis of strengths rather than of needs, and seeks to build on everyone’s inherent potential. Fifthly, it attempts to ‘bridge the gap’ between macro- and micro-levels and lastly, it is committed explicitly to several different dimensions of sustainability: environmental, economic, social and institutional’ (DFID, 1999). These, to a large extent, explain why the livelihood approach continues to be the central focus of contemporary rural and development studies.

3.1 The Sustainable Livelihood (SL) Framework

Since its emergence in the 1990s, the SL approach has seen massive proliferation of analytical frameworks, which serve as a guide tool for analysing the multiple strands of poverty (Owusu, 2009). Popular among these, however, are those of (DFID, 1999) and (Scoones, 1998). In particular, that of DFID has formed the bases of latter frameworks, especially among development organizations and NGOs such as UNDP and Care International. But the numerous frameworks have three common attributes; the first being the concentration on the livelihood of the poor; poverty reduction is the core. The second is the rejection of the sectoral entry point; it starts with the analysis of livelihood systems of the people to guide in formulating appropriate interventions. The third is the adoption of participatory approach in identifying and implementing development interventions (Krantz, 2001). To this end, the numerous frameworks share a common aim: allow for comprehensive analysis of livelihood in order to inform strategic interventions critical for effective poverty reduction (Krantz, 2001).

The SL framework presents the core factors that affect people’s livelihoods and shows their inter-linkages (DFID, 1999). The framework has input-output relationship represented by capitals or assets for inputs and livelihood strategies for output (DFID, 1999). The two are in turn linked to outcomes, ‘which combines familiar territory (of poverty lines and employment levels) with wider framings (of well-being and sustainability)’ (Scoones, 2009). In the words of Farrington et al., (1999), the SL Framework was “not intended to depict reality in any specific setting . . . [but] rather [used] as an analytical structure for coming to grips with the complexity of livelihoods, understanding influences on poverty and identifying where interventions can best be made. The assumption, however, is that people pursue a range of livelihood outcomes (health, income, reduced vulnerability, etc.) by drawing on a range of assets to pursue a variety of activities. The activities they adopt and the way they reinvest in asset-building are driven in part by their own preferences and priorities. They are also influenced by the types of vulnerability, including shocks (such as drought), overall trends (in, for instance, resource stocks) and seasonal variations. Options are also determined by the structures (such as the roles of government or of the private sector) and processes (such as institutional, policy and cultural factors), which people face. In aggregate, their conditions determine their access to assets and livelihood opportunities and the way in which these can be converted into outcomes. In this way, poverty and the opportunities to escape from it, depends on all of the above”. And unlike the conventional approaches which tackle poverty from sectoral bases, the SL framework is non-sectoral, as it focuses on people, their assets and activities and how they combine these different elements to meet their livelihood expectations (Carney, 1999). For illustration purposes, this study presents the DFID’s framework.

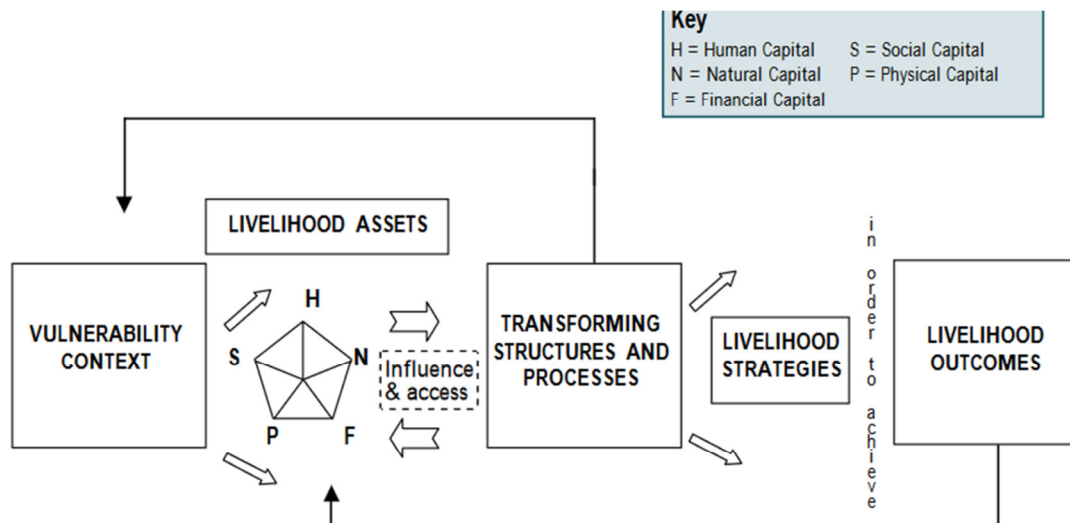


Figure 1. DFID Sustainable livelihood framework

Source: DFID, 1999

In essence, the SL framework is an analytical framework for coming to grips with the complexities of livelihood activities. Its significance is that it spells out the core areas (e.g. assets, livelihood strategies and vulnerability) critical for analysis, in addition to their interlinkages. Although the major sustainable livelihood components are well known, the numerous SL frameworks and related studies have failed to clearly propose an integrated model to measure and guide rural livelihoods towards sustainability. Previous studies have taken reductionist forms, as they have failed to give an indication of what livelihood sustainability is all about.

4. Sustainability

Even though considered a 'buzzword' (Scoones, 2007), the term sustainability has become a household name, and increasingly applied to almost every aspect of human endeavour. It is believed to have been coined several years ago by a German forester, Hans Carl von Carlowitz, in 1712, in his work 'Sylvicultura Oeconomica', which he used to propose long-term management principles for forests (Scoones, 2007). The popularity of the term, however, was in the 1980's, a period marked by debate on sustainable development and publication of the World Commission on Environment and Development (WCED) report entitled 'Our Common Future', which sought to define what sustainable development is all about (WCED, 1987). Ever since, there has not been a turning back on the term, as there has been a significant proliferation of materials dealing with sustainability, although with conflicting views on the meaning of the term. For instance, what is to be sustained, by whom, for whom, and what is the most desirable means of achieving the goal are critical questions that have been raised (Agyemang and Evans, 2004). Some authors have even argued that the contested nature of the term has reduced its popularity in all spheres of endeavour (Bell and Morse, 2008). This is hard to believe in the sense that sustainability over the past several decades, has emerged strongly as a desired brand for governments, policy makers, development organizations, environmental and civil activists as well as the private sector, and has become a measuring standard of future prosperity in every human endeavour.

The original meaning of sustainability, it is argued, was linked to the maintenance of environmental quality (Bell and Morse, 2008). This system quality proposition, however, has been subjected to critical scrutiny. Bell and Morse (2008) used a simple illustration (Figure 2) to depict the complexity surrounding the system quality proposition. In Figure 1, Bell and Morse (2008) explained that sustainability within a system is a change in the systems quality. Sustainability, they explained, is equated to the situation where the systems quality remains constant or increases; a decline in quality, therefore, implies unsustainability. The seemingly simplicity nature of the proposition led Bell and Morse to raise three major critical questions; spatial extent of the system in question, temporal dynamics by which the system is assessed and the meaning of system quality itself, and how it can be determined. To the authors, the sustainability of any system has to be defined, understood and assessed based on those three aspects. In the context of agriculture, for instance, sustainability is perceived from two dimensions; sustainability as an approach and sustainability as a system property. The latter follows the 'system quality' proposition. Sustainability as an approach, considers some practices as sustainable, while others are not, and this results in well-defined good agricultural practices, such as soil conservation, crop rotation and minimal use of chemicals. By this, assessment of sustainability is a matter of monitoring and implementing the good farming practices (Morse et al., 2000). Sustainability as a system property suggests the ability of the system to thrive in a desired state and continue to function (Clayton and Radcliffe, 1996). The latter is considered cumbersome to assess, as one has to clearly define system boundaries and time scale (Morse and McNamara, 2000; Bell and

Morse, 2008). Meanwhile, scholars have argued that the sustainability of a system cannot be equated to the state of the system, owing to the fact that the system's present state may not be sustainable, and moreover, the dynamic context in which they thrive may require some modifications (Robinson et al., 1989). Nonetheless, the system quality is still preferred by many scholars. In a study which predates that of Bell and Morse (2008), for instance, Agyemang and Evans (2003) defined sustainability as 'the need to ensure a better quality of life for all, now and into the future, in a just and equitable manner, whilst living within the limits of supporting ecosystems'. The core point here is maintenance of system quality for a long period of time.

The above discussions on sustainability can be categorized into two; strong sustainability and weak sustainability (Bell and Morse, 2008). Strong sustainability argument is based on the belief that the environment is critical for future generations, and any damage done today will have lasting consequences in the future. This is the ecological perspective of sustainability. Weak sustainability, on the other hand, advocates trade-offs between environment, social and economic benefits. Here, premium is placed on financial value of system quality (Bell and Morse, 2008). In this wise, sustainability must aim at achieving a balance between the three pillars of development; social, environment and economic. This study takes into consideration the balance in developing the conceptual model of livelihood sustainability.

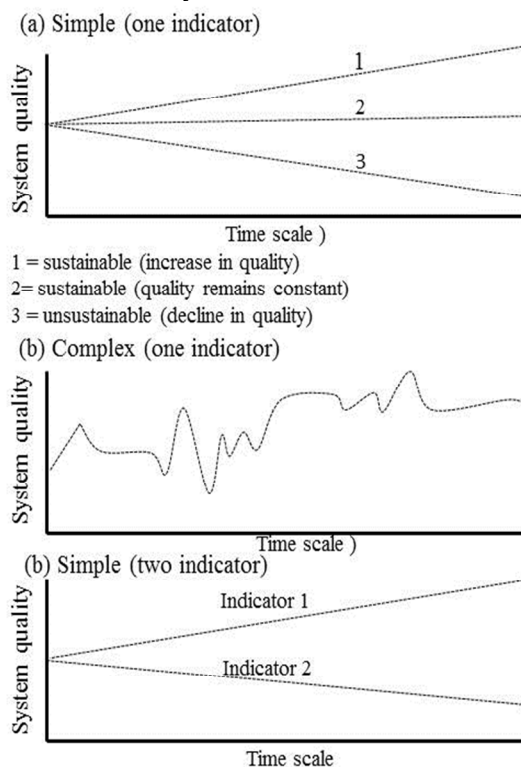


Figure 2. System quality and sustainability

Source: Bell and Morse, 2008

5. Livelihood Sustainability

In the context of livelihood, however, sustainability is defined as the ability to cope with, and recover from stresses and shocks, and the enhancement of capabilities and assets (Chambers and Conway, 1991; Scoones, 1998). To Chambers and Conway (1991), 'livelihood sustainability is a function of how assets and capabilities are utilized, maintained and enhanced, so as to preserve livelihoods'. Chambers and Conway (1991) identified two dimensions of livelihood sustainability; social and environmental. With regards to environmental sustainability, Carney (1999) contends that the attainment of sustainable livelihood is conditioned on sustainable use of available natural resources, which most rural communities depend on for their livelihood. The economic dimension is equally important, because sustainability regardless of context, requires a balance between economic viability, cultural integrity and social cohesion, in addition to the maintenance of the natural environment (Altman and Finlyson, 1993). In their study, Pandey et al., (2012) argued that economic returns from productive activities are critical in livelihood sustainability. The suggestion here is that in the context of livelihood activities, economic viability of the activities is equally important contributory factor to sustainability and rural well-being. And it is argued that analysing communities' current livelihood strategies and their asset endowment is a major step in understanding how livelihoods can be made viable and sustainable (Helmore and Singh, 2001).

The above discussion shares insight on what rural sustainability is all about. Bryan and Granjon (undated), defined rural sustainability 'as a continuous search for development strategies (aimed at a general improvement in the human condition) to maintain and produce 'healthy' rural communities, in which economic, socio-cultural, political and environmental values are compatible, and which respond to any imperatives in these dimensions'. The authors add that rural sustainability is a social construct and a dynamic process. It is achieved in several ways but the most common, it is argued, is the construction of diverse portfolios of livelihood strategies (Ellis, 1999). Livelihood diversification, according to Ellis (1999) enhances the resilience of rural households. In view of this, however, it is said that rural households who manage to build sustainable livelihood systems often have solid and stable asset base and have the capacity to bounce back after a period of perturbations (Niehof, 2004).

6. Multifunctionality, rural livelihood and sustainability

The concept multifunctionality has gained roots and become a guiding principle of rural development policies and discourse, particularly in Europe. Even though originally linked to agriculture (OECD, 1998b; 2001; Diben and Cocklin, 2008), multifunctionality over the years has gained applicability both in terms of scale and field of analysis, with popular areas including a region, natural resource management and policy interventions (Diben and Cocklin, 2008). In the words of OECD (2001), beyond its primary function of supplying food and fibre, agricultural activity and rural areas in general, can also shape the landscape, provide environmental benefits such as land conservation, sustainable management of renewable natural resources and the preservation of biodiversity, and contribute to the overall socio-economic well-being of rural areas. OECD's description presents a broad view of what multifunctional rural area is all about; a rural community performing multiple functions for the betterment of its inhabitants. Multifunctionality is commonly understood to connote the non-commoditized benefits that rural landscapes provide to enhance the harmonious co-existence of man and nature. The current observation is that the concept has crossed the boundaries of agriculture, with current concerns related to the societal need of both commodity and non-commodity goods by agricultural operators (Wilson, 2010). Multifunctional rural landscape is characterised by low-intensity and marginal farming activities and culturally valued geographic areas (Diben and Cocklin, 2008).

The genesis of the concept has been linked to four major sources; (1) the concern of sustainable development with an emphasis on environmental/ecological sustainability, (2) debates and negotiations on the need to modify the Common Agricultural Policy and to preserve agricultural support in European and other countries within a liberalising trade environment, (3) strategies for the provision of public goods and (4) the need for integrated rural development with emphasis on areas, such as the dynamic role of agriculture, livelihood and coping strategies and short food supply chains (Diben and Cocklin, 2008). These sources clearly give comprehensive cross-boundary application of the concept. But, scholarship interest in the concept is believed to have emanated from sociological and geographical work on areas, including rural change and rural community development (Diben and Cocklin, 2008). From the above sources, point number four is of great importance in the current context; it highlights the application of the concept not only as a lens to guide the assessment of the qualities of rural development trajectories, but also to assess rural livelihood sustainability.

The notion of 'rural sustainability, resilience and quality' can best be understood from the dimensions and characteristics of multifunctional rural system. Wilson and Dunckmann (2009) identified two dimensions of multifunctionality; strong and weak. According to the scholars, strong multifunctionality is associated with the best social, economic, moral and environmental quality, and it is the ideal for any system (Wilson and Dunckmann, 2009). Wilson (2010) argues that strong multifunctional trajectories are critical for building resilient and sustainable rural communities, because such a system has all the necessary capitals (social, economic and natural resources) needed for mitigating against shocks and stresses. Determinants of strong multifunctional rural systems include but not limited to high environmental sustainability (Wilson and Dunckmann 2009), livelihood diversification (Knickel et al., 2004), short food chains and high food quality (Marsden, 2003; Goodman, 2004) and low farming intensity (Evans et al., 2002; Pretty 2002). Clearly, it can be said that livelihood sustainability is a core attribute of multifunctional rural system. Weak multifunctional system, on the other hand, has characteristics which are opposite those of strong, e.g. low environmental sustainability, high farming intensity among others (Wilson and Dunckmann, 2009). Wilson (2010) provides a synthesized list (Table 1) of the characteristics of both strong and weak multifunctional rural systems. This study draws insights from the foregone literature in developing the conceptual model of livelihood sustainability.

Table 1. Dimensions and indicators of multifunctional rural system from capital perspective

| | | Attributes of strong multifunctional system | Attributes of weak multifunctional system |
|---------------------------------|-----------------------|---|---|
| Multifunctional rural community | Economic capital | -economic well-being -livelihood diversification -low dependency on external aids | -poverty -over dependence on agricultural activity -poor infrastructure -high dependency on external aids |
| | Social capital | -close community relation -good health and sanitation -good stakeholder interactions Strong governance -gender equality | -outmigration among the youth -lack of leadership -high death and life expectancy rate -gender inequality -net importer of food |
| | Environmental capital | -high biodiversity -availability and high water quality -sustainable soil management -predictable agricultural yield | -soil degradation -desertification -salinization -poor water quality -uncertainty over agricultural yield |
| | | | |

Source: Adopted from Wilson, 2010

7. A conceptual model of household livelihood sustainability

Drawing insights from the above literature discourse, this section presents the conceptual model (Figure 3), with application to rural households. This model aims to present an approach that would allow not only integrated livelihood sustainability understanding, but also aid in empirical measurement, in addition to serving as a policy tool. Per literature insights, the study argues that the sustainability of any livelihood activity is influenced by four major conditions (Figure 3); viability, asset, vulnerability and ecological impacts of the activities.

7.1 Viability level of the activity

The first is the viability nature of the activity. The argument here is that economic benefit is not only critical for the long term sustenance of the activity, but also for the general well-being of the people. This means that just engaging in any livelihood activity is not enough in achieving livelihood sustainability. In other words, the activities need to generate enough income to make them competitive in the long run.

7.2 Asset endowment of the activity

The second factor is the asset base of the activity. The argument expound here is that having adequate and diverse assets is critical for mitigating against stresses and shocks, which are endemic not only in rural areas, but also in urban environments. Assets are core to all the various Sustainable Livelihood (SL) frameworks, and livelihood activities. In rural environments, livelihoods are built based on the available assets (DFID, 1999). With assets, individuals and households are in a better position to develop their adaptive capacity to cope with diverse challenges. This is especially true as people require a range of assets to achieve positive livelihood outcomes. Lack of positive asset endowment impedes efforts to attain livelihood sustainability (Steel and Zoomers, 2009). According to Moser (1998) “the more assets people have, the less vulnerable they are, and the greater the erosion of people’s assets, the greater their insecurity”. Assets help to neutralize the impacts of stresses and shocks (Parizeau, 2015).

7.3 Vulnerability level of the activity

The third factor is the vulnerability level of the activity. The underlying argument here is that to achieve livelihood sustainability, activities that households’ engage in must be less susceptible to both internal and external shocks. In other words, the activities must be robust to disturbances. High vulnerable livelihoods suggest uncertainty, making prediction of future outcome difficult if not impossible. This, however, does not suggest that there should be absence of vulnerability. The argument here is that the activity has to be operated within an acceptable level of vulnerability; thus the vulnerability threshold has to be minimal.

7.4 Ecological impacts of the activity

The fourth factor is the ecological impacts of the activity. From the definition of SL, a livelihood considered sustainable needs to be in harmony with the natural environment. Thus the impact of the activity on the environment has to be minimal. This means that regardless of the economic benefits, the activity’s impacts on the natural environment need not be detrimental. This is especially true because the environmental capital stock

is not only critical for long term sustainable development (De Witt and Blignaut, 2000), but also core determinant of the livelihood trajectories and general welfare of rural communities (Wilson, 2010).

From the model, the t 's represents the thematic areas for analysis. In all, however, attainment of the conditions to a larger extent, would be influenced by the existing institutions and structures. The institutions are important in that they can create and uncreate livelihood opportunities, in addition to determining the rules governing the operations of the various activities (North, 1990). This means that even if a particular livelihood activity is viable, but inconsistent with the existing institutions and structures, people might find it difficult to operate successfully. In this sense, however, institutions are critical in determining whether a livelihood will be vulnerable or not, and also whether households can build asset or judiciously use natural resources or not (Messer and Townsley, 2003; Denker, 2012; Abebe, 2014).

The linkages among the factors are complex and must be analysed contextually. But holding other factors constant, viable livelihoods will contribute to the development of more livelihood assets (e.g. financial, physical) and vice versa. More assets (e.g. financial and human) on the other hand, means that households will have the capability to influence the institutional structures and also reduce their vulnerability level. Achieving t_1 , t_2 , and t_3 , within a particular context, would contribute to the attainment of more environmental capital and in turn, reduce vulnerability further, with the overall goal being to achieve livelihood sustainability. It is, however, cautioned that the interactions are not linear as presented here. The relationship between the factors could be much more complex. The model illustrates an approach to think about livelihood sustainability in an integrated manner.

For assessment purposes, the relationship between the factors and livelihood sustainability can assume quantitative representation as illustrated by the equation under the figure. From the equation, this paper proposes that Household Livelihood Sustainability (HLSI) of households indexed by i is a function of households Livelihood Viability (LV), Livelihood Asset (LA), Vulnerability (V), and Ecological Impacts (EI). The equation suggests that to know the index of household livelihood sustainability (HLSI), viability, asset, vulnerability and ecological impacts have to be quantified. Different techniques, including composite indices could be used to quantify each component. It should be noted, however, that indicators under each component needs to be context specific, taking into consideration geography and ecological zone. Household livelihood sustainability can also be assessed without quantifying the individual components. The latter would demand quality qualitative data.

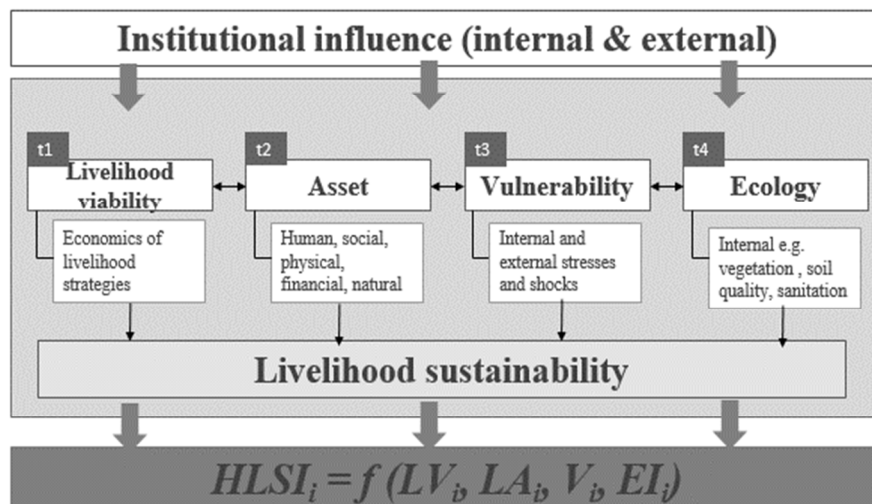


Figure 43. A conceptual model of household livelihood sustainability

Source: Author's own construct based on literature

8. Conclusion

This study aimed to draw insights from existing literature to develop a conceptual model of household livelihood sustainability. The study argues that the sustainability of any livelihood activity is conditioned on four factors; the economic viability for long term sustenance, asset endowment to mitigate the effects of stresses and shocks, minimal level of vulnerability and low ecological impacts. Since the model captures multiple issues (economic, social and environmental) relevant to understanding poverty, it has the potential to offer alternative way to think and analyse rural poverty and sustainability in an integrated manner. The model has the following attributes; (1) ability to illustrate multifunctional rural system, (2) potential to measure rural wellbeing overtime, (3) practical tool for rural development and planning purposes, (4) universal applicability, and (5) offers insights on where to channel effort and resources for optimum benefits. This study recommends application of the model in different contexts, using empirical data. Future studies may also consider refinement, where necessary.

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