

Chapter 2

Rural Livelihood

Rural Area: An open piece of land sparsely populated with scattered houses. Rural areas have low population densities and minimal infrastructure compared to cities and urban areas.

Rural population: Refers to people living in rural areas, as per definition of national statistical offices. Rural population is calculated as the difference between total population and urban population.

2.1 What Is a Livelihood?

A Livelihood can be defined as the activities, the assets and the access that jointly determine the living gained by an individual or household (Ellis 1998). When it comes to an individual, a livelihood is the ability of that individual to obtain the basic necessities in life, which are food, water, shelter and clothing. Therefore all activities involved in finding food, searching for water, shelter, clothing and all necessities required for human survival at individual and household level are referred to as a livelihood. Approximately 90 % of rural households are involved in farming activities (Davis et al. 2010a, b). In Africa, 70 % of the household income in rural areas is from farming activities, while in Asia and Latin America, 50 % of the income is from farming activities (Davis et al. 2010a, b). In these rural populations small-scale farming, fishing, raising livestock and non-farm activities are some of the common livelihoods that these populations survive on as a source of income (Fig. 2.1).

Due to variations in ability to access the basic necessities, there are people who are rich, able to acquire all their basic necessities without difficulty and those that are poor, and lack one or more of their basic necessities. The livelihood of the poor is gruelling as they find themselves in a state of poverty and lack basic necessities. Therefore to address the issue of poverty and its eradication, a concept called sustainable livelihood was proposed by Chambers and Conway (1991).

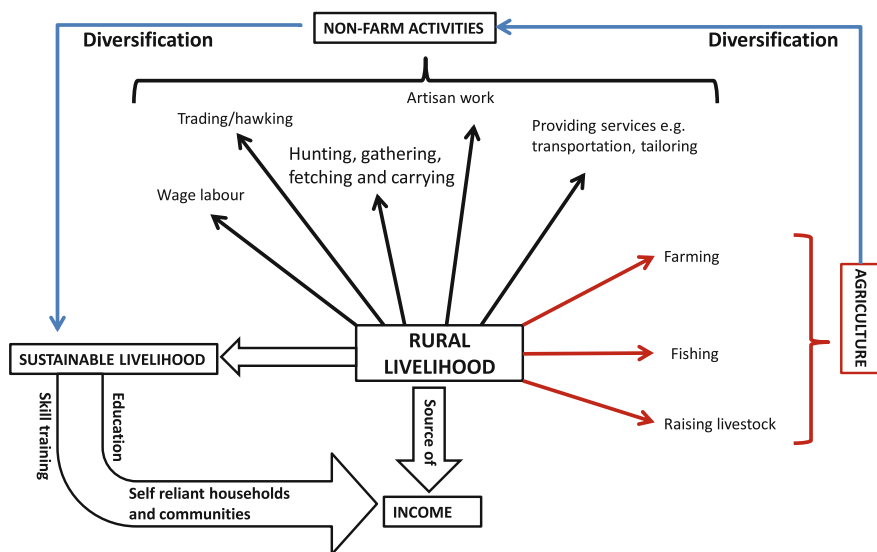


Fig. 2.1 Rural livelihoods as a source of income. Rural livelihood is a complex structure comprising of mostly agriculture, with part of the population diversifying into non-farm activities in order to attain a sustainable livelihood to get better income for their households

2.1.1 Livelihood Determinants

Livelihoods are determined by several factors which include (Ellis 2000; Fabusoro et al. 2010; Khatun and Roy 2012);

- **Unintended birth into a predisposed livelihood;** a designated system which defines an individual's livelihood, e.g. the caste system in India.
- **Gender;** where a livelihood is determined by the gender of an individual.
- **Inherited livelihoods;** where an individual takes up a livelihood that has been passed on in the family, for example cultivation, pastoralists, fisherman, shop-keeper, artisanal work, etc.
- **Spontaneous livelihoods;** that are taken up due to desperate situations where what an individual does is in principle determined by social economic and ecological situation.
- **Education and migration;** where qualifications determine which field of work an individual can exploit. People move to new areas in search for work and a better life, this migration determines the choice of livelihoods.

Those with wealth have a wider choice of a livelihood than those without. This is because with more resources one is able to afford an education or training which can complement or augment their skills thereby widening their livelihood capabilities, which is not the case for those without resources. A wider economic growth of a household or community creates a wider choice of livelihoods.

2.1.2 What Is a Household?

A household can be defined as human groups which share the same roof and resources. Categories of a household include:

- **People**—that is, the individuals and their livelihood capabilities.
- **Activities**—which encompass what they do.
- **Assets or possessions**—this is what they own be it food, property, clothing, houses, livestock, stocks and all things that provide material and social income.
- **Gains and outputs**—These are the resources derived from what they do that allows them to earn a living.

Some of the activities that fall under rural livelihood include:

- Agriculture (Cultivation, farming);
- Animal herding including livestock farming;
- Hunting and gathering
- Wage labour
- Trading and hawking
- Artisan work, for example, weaving and carving;
- Providing services in transport and other available services;
- Fetching and carrying;
- Bakery;
- Basket weaving

2.2 Sustainable Livelihood Framework (SL)

Robert Chambers and Gordon Conway defined sustainable livelihood and I quote;

A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living; a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (Chambers and Conway 1991).

The sustainable livelihood approach offers a holistic and integrative approach with the capacity to analyse and understand the complexity of rural development (Chambers and Conway 1991; Solesbury 2003).

Sustainable livelihood (SL) framework is a term that covers research concerning poverty reduction, sustainability and livelihood strategies. The SL framework is applicable to both rural and urban survival strategies. The five assets in sustainable livelihood are human capital, physical capital, social capital, financial capital and

natural capital. These assets play an important role in survival strategies both in rural and urban livelihoods.

2.2.1 Human Capital

Human capital is a combination of knowledge, habits, social behaviour and personality that contribute to economic benefits for an individual and/or community (Ellis 1996). This knowledge can be attained through education, creativity, availability of skills and talents, experience, training and exposure. Human capital also includes health of an individual, household and community.

Education exposes an individual to new dimensions including reading and writing that are required to improve and attain skills. Therefore education is a necessary investment for human capital. Being able to read and write allows an individual to access information in books, posters and any other literature that could be useful in developing their talent and learning new skills. Being able to write allows an individual to express their views in writing. With education come skills; an individual will acquire certain skills through their education, thus an educated household has a higher chance of gaining skills than a household without any education.

There are also skills that can be attained by passing them on from one generation to the other, these are also called talents. Such artistic skills may not require an education at all, but if an individual is educated they are able to boost their talents, for example exploiting markets that would not be accessible to someone without an education.

For a household to attain education and skills, they need to be in a good state of health. Illness disrupts a household in many ways, a sick individual will not be able to work, and this directly affects the flow of income. And if the individual who is sick is the one who provides for the household (bread winner), illness may result in serious disruption of the household status.

2.2.2 Physical Capital

Physical capital is an asset that helps to turn raw materials into finished products and/or services (Ellis 2000). Examples of physical capital include equipment such as a tractor on a farm, a sewing machine for a tailor, buildings and computers. Availability of physical capital boosts productivity and enhances income earned by a household. Physical capital allows for work to be accomplished faster as well as for diversification. To be able to make full use of physical capital, there is need for human capital, that is, the required skills, for example to operate machinery and to manage assets.

2.2.3 Social Capital

Social capital plays a major role in productivity of an individual, organization and community (Ellis 2000). Social capital refers to relationships, institutions and norms that shape societal interactions. Social networks are considered as horizontal associations between individuals, which increase productivity by reducing the costs of doing business and facilitate coordination and cooperation. Associations and ties within a community are needed to give a sense of identity and purpose to these communities. These ties are also a basis for access to information that can be of great assistance to the community. One example is obtaining loans and/or credit and funding (microfinance) for community projects which is a common occurrence in most developing countries.

2.2.3.1 Microfinance

Microfinance can be defined as services in form of financial assistance for entrepreneurs and small businesses lacking access to banking and comparable services. Microfinance can be categorized as a tool for economic empowerment, health research development and for human development.

Microfinance and Economic Empowerment

Microfinance has brought financial security, social security and improved lives for many in developing countries. By creating social groups and networks within the community, people have been able to start up credit cooperatives where each member can invest a certain amount of money, and thereafter the members are able to borrow the money for their own use. Community participation in microfinance activities has been successful because individuals see the benefits from their participation (Kondo et al. 2008; Moll 2005; Quirós and Gonzalez-Vega 2007; Yadav 2014). Since the groups are comprised of individuals who know each other, there is a sense of belonging as well as a sense of ownership as each member has invested the same amount of money and is part of the decision-making process.

Saving and credit cooperatives and social cash transfer programmes have improved livelihoods but also brought challenges to many. Those who are not able to repay loans have lost their property to the credit organizations to which they owed money. For the successful ones, members of the groups are able to finance their businesses, support their households and are able to diversify their livelihoods because they have a financial security through the cooperative (Gibbs et al. 2012). These credit groups also provide money as start-up capital for small businesses. Most of these social credit groups are comprised of women who donate cash to a group account organized by the group members. After a period of time they rotate who can borrow the money from the group and the individual has to pay back the money within a certified period with interest. The social and financial security provided by the credit cooperatives allows for compliance, thereby success of the groups.

Microfinance and Health

The link between health, poverty and livelihoods is critical when analysing the importance of microfinance. Lack of employment and/or loss of livelihood, the impact of HIV/AIDS and other chronic illnesses on a household and lack of income have rendered both men and women vulnerable to poverty. This in turn fuels inequalities and vulnerable communities resort to livelihoods that are unsustainable, affecting the health and well-being of both men and women in different ways (Kim et al. 2009). Microfinance is therefore not only a source of income, but one way to develop a community to attain sustainable livelihoods.

Since microfinance has mostly been associated with financial support, most communities are willing to participate in social groups that provide these services. Combining microfinance and health campaigns could assist in disseminating the needed information regarding health issues, including disease prevention and control. This concept was tested in South Africa where a health training component was added to group-based microfinance programmes. The outcomes showed that it is possible to achieve broader health benefits when there is partnership between health, economic and social sectors when implementing interventions (Kim et al. 2009).

Apart from economic empowerment for small-scale entrepreneurs can microfinance be beneficial in health research? Most developing countries suffer shortages of well trained-health personnel which have contributed to the underperformance of health systems and primary health care. Is it possible to create saving and credit cooperatives that can support health research and health service delivery in developing countries? A concept of micro Research or microgrants was put forward where small grants could be provided to researchers in developing countries (Boccia et al. 2011; Geissler and Leatherman 2015; Kollmann et al. 2015; Seiber and Robinson 2007). The challenges associated with this concept though, have been that most often the donors for the microgrants already have selected subjects that they are interested in, which most often are not the pressing needs in the affected countries (MacDonald and Kabakyenga 2008). Secondly, this is not a sustainable solution as microgrants are only given for a short period of time and when the grant runs out, the study is abandoned. This creates not only false hopes in the communities where the studies are conducted but also a lack of trust in groups that come with health interventions into the community due to lack of long-term benefits.

Microfinance and Human Development

The BRAC Story

A great example of micro credit and human development is the Bangladesh Rural Advancement Committee (BRAC). The programme which started in Bangladesh in 1972 has over the years expanded into 10 countries in Asia (Afghanistan, Sri Lanka, Pakistan and Philippines), Africa (Tanzania, Liberia, Uganda, Sierra Leone and South Sudan) and in the Caribbean (Haiti). The focus of BRAC has been on human

development through adult literacy, vocational training, public health and improvement of livelihoods. The target populations for BRAC are the poorest of the poor, the landless, small farmers, artisans and vulnerable women. Through provision of micro loans, including follow-up and careful evaluation of their work, BRAC is a success story in the use of microfinance for human development.

Microfinance and Livelihoods

Even though microfinance has helped others to boost their businesses and attain financial security to others, it is the contrary (Kondo et al. 2008; Odi et al. 2013; Sharma 2001). Instead of improving their livelihoods, to some microfinance has plunged them into utter poverty. This has led to lack of willingness in participating in development projects with a microfinance component. This has also led to the development of local microfinance schemes based in social networks within the community. Since members decide on the conditions of repayment, the conditions are manageable. Most people in rural areas in developing countries are already struggling with poverty and while microfinance schemes might provide financial security to some, shocks such as disease can easily affect the financial stability of a poor household. In case of illness within the household, finances might be easily channelled from businesses to support the health expenditures, thereby affecting the business. For the very poor, microfinance schemes may seem out of their reach, because they have neither the resources nor collateral to obtain the loans (Buckley 1997; Littlefield et al. 2003; Nasir 2013; Swope 2007). Training schemes that can instill skills in disciplines such as sustainable agriculture, and how communities can use the available resources sustainably at the same time improving their livelihoods, could also be of greater benefit to the rural poor.

2.2.4 Case Scenarios—Microfinance

1. Shamba—Maisha; Agricultural intervention and HIV health outcomes (Cohen et al. 2015)

This was a multi-sectoral agricultural and microfinance intervention carried out in two districts in Kenya which depend on farming and fishing. The study area is vulnerable to drought and has an HIV prevalence of 15.3 % (Kenya National Bureau of Statistics and ICF Macro 2010). The project was designed to:

- *Improve food security*
- *HIV clinical outcomes*
- *Women Empowerment.*

Interventions included:

- *A microfinance loan to purchase*
- *Micro-irrigation pump, seeds and fertilizer.*

The outcomes of this pilot study were that there was high acceptability in recruitment; the micro-irrigation water pump proved to be labour saving and the initiative delivered strong financial and agricultural training. Despite these successes, the challenges experienced were:

- *Weather patterns that affected agricultural productivity;*
- *A challenging partnership with microfinance institutions;*
- *Concerns on repayment of loans.*

2. *BRAC in Afghanistan—A collaboration between developing countries*
(Chowdhury et al. 2006)

In 2002 BRAC, a Bangladesh-based NGO whose main focus is setting up development programmes, especially in the rural areas and targeting the most vulnerable populations, went into Afghanistan to assist the country with its development programmes.

In Afghanistan, BRAC managed to set up development programmes in health, education, agriculture, community development and provided microfinance services by providing loans to small businesses. Through the loans, some women who lost their husbands to the war and were selling fruit and vegetables to earn a living were able to educate their children and expand their businesses.

Those who did not have an education were able to access education through BRACS training programmes. BRAC was also able to train community health workers who served the health needs in their communities.

2.2.5 Financial Capital

Financial capital refers to any liquid medium or mechanism that represents wealth such as money, purchasable items, savings, credit, etc. It can also be defined as saved-up wealth that can be used to start-up or maintain a business. Availability of capital allows for growth of a business through innovation, diversification and skill enhancement; i.e. engaging in activities that will assist in earning income and resources needed by the household.

2.2.6 Natural Capital

Natural capital is the basis of all human economic activity. Natural capital includes land, water, air, living organisms and all ecosystems on the Earth that are necessary for human survival and well-being. In general, natural capital refers to natural resources (Barbier and Hochard 2014; Ellis 1996, 2000).

All the five SL assets outlined above are important aspects to livelihood both in the urban and rural setting. In order for a livelihood to be sustainable, and for a household to survive, there is need for a household to diversify.

2.3 Rural Livelihood Diversification

Diversification can be defined as activities undertaken by household members in order to improve their social status and standard of living (Ellis 1996). Diversification can also refer to attempts undertaken by an individual or a household to find new ways of survival to raise income and endure shocks such as disasters and disease outbreaks (Khatun and Roy 2012).

In the past decades, there has been a reduction in farming as a source of livelihood in rural areas and an increase in participation in non-farm activities or a combination of both to sustain a household (Ellis 1996, 2000). The reliance on agriculture though tends to decrease when household income levels rise, as observed in sub-Saharan Africa. In India and many parts of sub-Saharan Africa and most developing countries, farmers are opting for diversification rather than farming only as the small-scale farming or land-based livelihood are proving unsustainable and cannot support their families for food and fodder for their livestock. This trend has been observed in Uganda, Kenya, Nigeria, and Malawi. Small-scale businesses such as hawking, selling of second-hand clothes, car parts and scrapped metal and goods, selling readymade food are on the rise. This small-scale market boom has also resulted in the rise of theft for those who want to make quick money. There is a common pattern in most developing countries where the very poor and those who are relatively well-off tend to have a more diverse livelihood than the middle range income earners (Ellis 1996). When a rural household has diverse sources of income earning activities, its chances of survival financially are better than those of a household which has only one source (Ellis 1996). But there are also cases where a household may have less diversification, that is, only one or two income sources with a strong income base and well-established platforms and are achieving more from their livelihoods.

2.3.1 *Determinants of Livelihood Diversification*

Factors that determine diversification include age, access and level of education, size of the family, dependency ratio, access and availability of land, assets, access and availability of irrigation facility, access to credit and ability to borrow, distance from town, training/skill development, and membership to social groups (Khatun and Roy 2012).

Age: Children for example will end up following their parents' livelihoods; but as they grow older and gain more skills they have a better chance of diversifying

into other livelihoods. Young people are more energetic than older folks; hence the types of livelihoods that can be acquired by these two age groups will be different.

Access and Level of Education: education is the key to literacy. If an individual is able to read and write they have a higher chance of choosing an appropriate field of work or further skills training in order to advance their livelihoods. Most of the information for skills and application that can sustain and offer technological advances in livelihoods are in writing and if one is not able to read and write the chances of advancing are low. Literacy opens channels that can help access credit and loans that can be used as start-up capital and or extra capital to advance a particular livelihood.

Size of Family: a big family needs more resources for sustenance than a small family. People with big families will venture into as many ways as possible to gain the required resources to support their families. If each member of such a household is able to attain a skill that brings in income, there is a high probability that the big family will do well. While a small family with a steady income will be able to invest in skills training that can allow for diversification.

Dependency ratio: measures the pressure on the productive population. Dependency ratio measures the population of dependants (people younger than 15 and those older than 64) against the productive population (ages 15–64). In a household dependency ratio measures the ability of the household to sustain and meet their needs. Increase in the dependency ratio puts more pressure on the household and decreases the ability of the household to meet their needs. An increased dependency ratio will push the household into diversifying into other activities that can bring more income to the household (Khatun and Roy 2012).

Availability of Land: apart from human capital, availability of land is also fundamental in rural livelihoods (Barbier and Hochard 2014). Land, being a natural capital is a valuable asset for the rural poor. People need the land for agriculture, to build homes and as a base for their small-scale businesses and non-farm activities. Therefore, lack of land directly affects the development for rural households and pushes populations to diversifying into other activities and livelihoods that will not require acquisition and/or ownership of land (<http://web.undp.org/drylands/docs/Governance.pdf>). Land is a source of food and income for the rural poor, lack of land therefore leads to lack of food and income hence hunger and malnutrition. According to the World Bank, world development indicators, as of 2013, 47 % of the world's population lives in rural areas with a 0.1 % annual growth. Lower income countries have higher rural population compared to high income countries, with South Asia having the highest rural population followed by sub-Saharan Africa (<http://wdi.worldbank.org/table/3.1#>).

Assets: Availability of assets in a household increases the chances of investing into new markets and or activities that will enhance the economy of the household. Availability of assets allows for collateral that can be used to obtain loans and credit that can be used to boost capital and start up new businesses and income generating activities. A poor asset base limits a household's ability to diversify and/or acquire loans or credit.

Access and availability of irrigation facility: technology such as irrigation and availability of irrigation facilities to farmers can help boost the income of farmers and their households. A farmer who has access to an irrigation facility will be able to make multiple harvests which provide the needed food for the household as well as extra that can be sold as a source of income. This income can also be used to acquire assets as well as invest in other activities that will bring more income into the household, thereby improving livelihoods and allowing for diversification.

Access to credit and ability to borrow: Access to credit and ability to obtain loans allows for diversification. With enough capital to start up a new business or acquire assets that can be used to advance a livelihood, access to credit is beneficial to a household. However, ability to raise collateral and to pay back the loan is critical in fuelling diversification; otherwise poverty levels have increased with resultant loss of assets for non-payment of loans.

Distance from town: rural populations that are closer to a town are able to source markets for their produce and also have a chance to access facilities and infrastructure such as markets, banks, credit facilities and health facilities that can further develop their livelihood. Access to town also means access to non-farm activities and skills that can be of benefit to a household. A household or community that is further from town has poor access to these facilities and has less chance of diversifying.

Training/skill development: in order for a household to diversify, there is need for human capital. Human capital is an asset in diversification for rural livelihoods because the more the skills attained by a household the easier it is to diversify. At the family level, the more the skills in a household, the more they can venture into different markets thereby widening their ability to make money and support their family. At an individual level, diversification in markets and ways of making a living can also aid in raising social capital and status. Better-off families are able to diversify more favourably than poor families as they possess the financial and social capital that is lacking in the poor families. Delivery of quality education and training in rural areas is required to attain sustainable rural livelihoods. Owing to low human capital, the rural poor tend to diversify in less profitable labour markets than their wealthier counterparts. The rural poor will mostly be involved in part-time and casual labour that does not require skills. As a result the poor make very little income, which results in failure to create opportunities that could earn them more money, and they are denied opportunities to improve their status—an example of low human capital (Ellis 1996).

Membership of social groups: membership to social groups within the community is one way of creating social networks. These networks are beneficial in obtaining knowledge that can be used to further livelihoods. Social clubs have also been used in developing countries as ways of obtaining credit loans and as training grounds in skills that are necessary in livelihood diversification and improvement for communities in rural areas.

2.3.2 Constraints of Diversification

Depending on the location of an individual or a household, they can be faced with assorted constraints and challenges. These challenges can determine whether and how this individual or household will diversify. These include:

Lack of Road Network and Transport Facilities

Poor road network has resulted in certain communities being isolated (GIZ 2013). Isolation implies that a community may be cut off from the nearest health facility, nearest bank or the nearest institutions that may offer loans and/or the nearest education facility that could assist in upgrading skills for the people in the community. These effects in turn reduce that community's chances of diversification.

Poor Asset Base

Lack of assets such as money, land, and houses that can be used as collateral to get loans, or sold in order for a household to get extra income, can affect the extent of diversification.

Climate

Climatic dispositions can pose challenges in livelihood diversification. Areas that are associated with harsh climates may avert investors. The lack of necessary infrastructure deters development of new activities and markets in such regions. Availability of new markets encourages communities to diversify as they try to exploit the new opportunities.

Lack of Credit

Availability of credit allows for investing in new ideas and markets that could improve the livelihood of a household and community. Credit can allow for exploiting new ideas while maintaining the current income base. Lack of credit is a constraint to diversification as the risk of failure of the new market can heavily affect the financial status of the household—hence most households are less willing to diversify.

Lack of Awareness and Training

Lack of information can lead to households missing opportunities that could be beneficial for their skill development and market opportunities.

Lack of Infrastructure

Most rural areas in developing countries are isolated and lack the basic infrastructure such as schools, hospitals, transportation and markets that are beneficial for the health and development of the community. Lack of infrastructure for education also denies communities the basic education that is needed in order to obtain further skills.

2.4 Natural Disasters/Shocks and Rural Livelihood

Some of the challenges that have affected rural livelihoods include natural disasters and disease outbreaks. These bring serious threats to livelihoods with the rural poor being the most affected. Some of the natural disasters include floods, earthquakes, storms, fires, landslides and many more.

Natural disasters result in loss of lives, property and livelihoods. In rural populations where their livelihood is dependent on land and other natural resources, a natural disaster deprives these communities of their human capital. People lose their crop, livestock and source of income resulting in loss of their financial capital. Apart from these, people also lose their homes; communities are left with nothing and struggle to recover from the disaster. Natural disasters can lead to poverty due to loss of income and income generating resources. This is further complicated by diseases that emerge after the natural disaster.

The threat of disease outbreak in a disaster zone is also heightened by the presence of dead bodies that are often left out for days and start decomposing, poor sanitation, overcrowding and lack of basic amenities.

Some of the infectious diseases that have been associated with occurrence of natural disasters include the following.

2.4.1 Diseases Associated with Contaminated Water

Lack of safe water is a major problem after occurrence of a natural disaster. Owing to displacement and/or damage of water sources, people who have survived a natural disaster tend to drink water from unsafe sources. This is very common in developing countries where there is lack of rapid response and availability of aid to the victims. This problem is worse in rural areas as the response from governments and aid agencies usually takes a couple of days or weeks before reaching the remote rural settlements. Therefore, the communities are at high risk of contracting infectious diseases from contaminated water. Diarrheal diseases caused by *Vibrio cholera*, enterotoxigenic *Escherichia coli*, *Cryptosporidium parvum*, *Salmonella*, *Hepatitis A* and *E* are some of the common diseases occurring preceding floods. Zoonotic diseases that can be passed on through water contaminated by rodent and livestock urine such as *Leptospirosis* can also be a major threat to the communities that have survived a natural disaster such as flooding. *Leptospirosis* is a bacterial disease that affects humans and is passed on from animals to humans through contact with urine from infected livestock and rodents.

2.4.2 Diseases Associated with Crowding

After a natural disaster people move to camps or other areas of safety, which in most occasions are very crowded. There is then a high risk of transmission of infectious diseases including measles, meningitis, cholera, malaria and other acute respiratory diseases. Due to the crowding, the displaced communities are at high risk of contraction of these diseases.

2.4.3 Vector-Borne Diseases

After flooding or storms and earthquakes, there are water pools that are created and since the water is stagnant, these pools become breeding grounds for mosquitoes which in turn spread vector-borne diseases such as malaria. The natural disaster may cause changes in the environment which can end up introducing vectors in new areas resulting in emergence of the vector-borne diseases in new areas and potential outbreaks.

2.5 Disease Outbreaks and Livelihoods

What influences emergence and re-emergence of diseases?

Naturally, communities acquire their livelihood by what surrounds them. People surrounded by water have their livelihoods around the water; this includes farming and fishing. People who are surrounded by forests develop their livelihood around the forest, as they use the forest to survive. These communities will hunt animals in the forest as their source of food and will eat fruits and berries and other plant products that are available in the forest, they also cut down trees to harvest firewood and timber, and wild mushrooms for sale to realize income. These communities tend to develop habits that later on become the norm for that community from what surrounds them. But how does this contribute to emergence or re-emergence of infectious diseases? The two communities described above are exposed to two different environments and will likely be exposed to different animals and insects in their habitats. This also means that these people are very likely to be exposed to different disease causing agents that are found in their surroundings. Any change in their living conditions and/or their surroundings could result in elimination of a certain disease and/or introduction of another.

There are several factors that affect emergence and re-emergence of diseases, these include:

1. Human behaviour; such as
 - (a) acquisition and keeping of exotic pets,
 - (b) use of companion animals,

- (c) consumption of exotic foods, e.g. wild/bush meat, raw sea food and raw vegetables,
 - (d) tourism,
 - (e) changes in land use patterns,
 - (f) alteration of livestock management practices,
 - (g) human migration.
2. Climatic change which has affected arthropods;
 3. Migration of animals;
 4. Pathogens acquiring new virulence traits.

In the context of rural livelihood I will discuss mainly human behaviour and how this has contributed to emergence and re-emergence of infectious diseases.

2.5.1 Human Behaviour

Human behaviour has resulted in a range of environmental and ecological changes, some of which have influenced emergence and re-emergence of infectious diseases.

Consumption of exotic foods; in rural areas, consumption of exotic foods such as bush meat is a common practice. Unfortunately, this has also led to introduction of diseases from wild animals to the human population. Most of the current emerging diseases are zoonotic meaning that they are transferred from animals to humans. Changes in land use patterns have led to people encroaching into forest areas bringing individuals into close proximity to wild animals and new pathogens. Due to the growing global population, people are moving into areas that were uninhabited in search for land for agriculture and for construction of homes, and for pasture lands to sustain their livestock. Search for new pasture lands has resulted in domestic animals coming into close proximity with wild animals hence exposure to new diseases for the domestic animals.

Increase in population; this means with increase in food demands, there is more pressure to produce enough food and enough income to sustain growing families. In rural areas this has led to diversification of livelihoods where people are moving away from farm activities and opting to migrate to areas where they can earn more money to sustain their households. This migration involves moving to areas where they can find work in the form of hired labour, or to towns where they can start up more businesses. This movement exposes populations to new pathogens that exist in their new found home, at the same time these migrants bring new pathogens to this new environment.

Increased migration; this has also resulted in development of squatter homes with poor sanitation. Poor sanitation is a good source of infectious diseases such as malaria, dengue, leishmaniasis, cysticercosis (tapeworm), cholera and other diarrheal diseases that can easily spread in densely populated areas with poor sanitation. Spread of other infectious diseases such as HIV and the risk of disease outbreaks such as measles, chicken pox and scabies are also common.

Conflicts; amongst others conflicts are the main causes of migration that have resulted in introducing diseases across borders. Many people running away from civil wars and/or regional wars have found themselves hiding in the wild and thereafter migrating to neighbouring countries. This has allowed for acquisition and introduction of new disease pathogens and/or re-emergence of diseases that were eradicated. Conflicts have resulted in breakdown of public health measures, including vaccinations and surveillance; populations from these regions may miss out on vaccinations necessary to protect them from certain infectious diseases. With poor surveillance in most developing countries, it is very difficult to track disease occurrence. Re-emergence of polio in countries surrounding Afghanistan, Pakistan and parts of Nigeria and surrounding countries is an example of this.

International cross-border travel; there has been an increase in international cross-border travel for work, leisure and/or study. This cross-border travel is also another route of spreading infectious diseases. The SARS, MERS and Ebola outbreaks are some examples of how international travel can allow for spread of infectious diseases across borders and continents. The SARS outbreak originated from China, spread through Hong Kong and other parts of Asia, to Europe and America. MERS virus spread from the Middle East into South Korea, and the Ebola virus crossed borders from Guinea to Liberia, Sierra Leone, Senegal, Mali and Nigeria.

2.6 Conclusion

Livelihoods are an important part of human existence. In order for a population to survive there is need for livelihoods that would sustain and support their households. Economic growth creates opportunities for a wider choice of livelihoods. Sustainable livelihoods are needed for economic growth and development of rural populations. There is need for human, social, economic, financial, physical and natural capital for livelihoods to be sustainable. Diversification of livelihoods increases chances of economic growth and survival of a household. Livelihoods have been affected by shocks such as natural disasters and disease outbreaks which have led to partial and/or complete loss of livelihoods. Natural disasters contribute to emergence and re-emergence of infectious diseases. These diseases play a role in livelihood sustainability as well as diversification.

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