INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
Vol: 12 **No:** 1 **Year:** 2020 **ISSN**: 1309-8055 (Online) (**pp.** 239-254) **Doi:** 10.34109/ijefs.202012115
Recieved: 12.11.2019 | **Accepted:** 28.12.2019 | **Published Online:** 01.01.2020

-RESEARCH ARTICLE-

RURAL ECONOMIES AND LIVELIHOOD ACTIVITIES IN DEVELOPING COUNTRIES: EXPLORING PROSPECTS OF THE EMERGING CLIMATE CHANGE CRISIS

Thanyani Selby Madzivhandila

University of Mpumalanga

E-mail: t.madzivhandila@ump.ac.za

Orcid ID: Orcid.org/0000-0003-0793-233X

Ferdinand Niyimbanira

University of Mpumalanga

E-mail: f.niyimbanira@ump.ac.za

Orcid ID: Orcid.org/0000-0003-2800-9069

–Abstract–

Even though rural economies are widely informal, they have created a variety of income, employment opportunities and food security for rural communities. In most developing countries, particularly those in Africa, Asia, Caribbean and Latin America, rural economies comprise economic activities in sectors such as agriculture, tourism and fisheries amongst others. However, in recent years, the emergence of climate change has resulted in the collapse of some of the rural businesses leading to the increase in the unemployment rate in most rural economic sectors. Climate change encompasses modification in average weather conditions or in the distribution of weather leading to unprecedented and sometimes extreme weather events. Recently, climate change has been linked with extreme episodes of rising sea levels. El Nino, La Nina, hurricanes, floods and droughts have caused a lot of damage in the rural economic sectors. The purpose of this paper is to review the prospects of climate change's impact on the rural economy with respect to employment trends. In other words, the question the

Citation (APA): Madzivhandila, T. S. & Niyimbanira, F., (2020), Rural Economies and Livelihood Activities in Developing Countries: Exploring Prospects of the Emerging Climate Change Crisis, International Journal of Economics and Finance Studies, 12 (1): 239-254. Doi: 10.34109/ijefs.202012115

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

paper intends to answer is: To what extent does climate change impact on rural economy including livelihood activities? The research method this paper used is based on theoretical knowledge derived from literature material such as academic articles, books and other sources of academic publications. The paper argues that the slow growth of rural economy, livelihood insecurity and lack of creation of new employment opportunities in rural areas can also be linked to the emergence of climate change in recent times. For instance, drought and floods have destroyed most of the rural livelihood activities and agricultural products, while tourism and fishery businesses have suffered the same fate, thus leading to fewer employment and job losses. The article concludes that, a diversification of measures to respond to climate change impacts on rural economy and needs to be devised if employment opportunities are to be created for rural communities.

Key Words: Climate Change, Rural Economy, Employment Trends, Livelihoods Activities

JEL Classification: Q54, R11, J21

1. INTRODUCTION

Economically, rural areas of many developing countries engage in diverse activities, which range from agriculture, tourism, fisheries and other related livelihoods activities (Shemsanga, Omambia & Gu, 2010; Fieldsend & Kerekes, 2015; Asha & Madzivhandila, 2016). These activities have provided employment and livelihood opportunities for rural communities for many decades now even though most of them were informal in nature. Fieldsend and Kerekes (2015) note that the nature and environmental base economy of most African countries have heavily relied on products and services from agriculture, including the agri-food supply chain, forestry, tourism and crafts which provide most of the rural population jobs and income. However, in recent times, climate change has threatened the ability of the said industries to not only create sustainable jobs and income, but also government roles to successfully develop and maintain public and private infrastructures, thus deterring progress towards poverty alleviation and food security (Olsen, 2008; Ding, Hayes & Widhalm, 2010).

Climate change has increased incidents of extreme weather events. These changing weather patterns severely influence the rural economic activities and livelihoods (Fieldsend & Kerekes, 2015; Asha & Madzivhandila, 2016; Madzivhandila & Niyimbanira, 2016). Consequently, climate change continues to pose inevitable dangers to the communities around the globe. In the Caribbean countries for instance, the extreme events of climate change-related disasters are

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

aggravated when it comes to economic activities such as fishing and tourism due to the biophysical and socio-economic characteristics of these countries (Sookram, 2009). Furthermore, in this region, most economic sectors which are virtually nature-based are affected in multiple ways. For instance, high numbers of job losses occur due to natural disasters linked to climate change, reduction of productivity, decrease in tourist demand and increment of the number of violent hurricanes and other climate change-related storms (Olsen, 2008). On the other hand, in sub-Saharan Africa and many other poor Island States, cereal production which is particularly sensitive to changes in temperature and precipitation is continuously declining. The International Labour Organisation (2008) reports that, not only does climate change impact on rural economic activities and livelihoods, it also poses threats to the achievement of the Millennium Development Goals (MDGs), threats which are exacerbated by an increase in inflation, food and other human basic commodity prices. Furthermore, Olsen (2008) laments that it is developing countries which will be the hardest hit by the impact of climate change due to the fact that most of these countries are already poor and financially weak, rendering them more vulnerable to the effects of climate change.

The research method this paper uses is based on theoretical knowledge derived from literature material such as academic articles, books and other sources of academic publications. Therefore, the article provides an argument that, the current decline in rural economic activities and its employment trends can also be attributed to the impact of climate change. In order to shed more light on this sentiment, the objectives of the paper include discussing the common aspects of rural economy which include agriculture, tourism and fisheries. The objectives further embrace to discuss the impact of climate change on rural economic activities and also some of the rural economic employment features and trends and how they are declining due to climate change. Lastly, the article recommends some coping measures which rural economies may adopt amidst climate change influences on activities and the livelihood of rural communities.

2. RURAL ECONOMIES AND LIVELIHOODS ACTIVITIES: THEORETICAL FRAMEWORK

The theory pertaining to the argument of this paper is the Sustainable Livelihood Approach (SLA). This theory recognises the complex nature within which the rural income earning activities and livelihoods are entangled in, and how such activities are dependent on the environmental characteristics and the climatic conditions of a given area. In other words, the “Sustainable Livelihood Approach is defined in terms of the ability of a social unit to enhance its assets and

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

capabilities in the face of shocks and stresses over time" (Morse, McNamara & Acholo, 2009:4). Furthermore, the approach seeks to identify the important assets in livelihood, their trends over time and space as well as the nature and impact of shocks and stress in terms of environmental, economic and social assets. Following this, and "after taking cognisance of the wider context (e.g. political, legal, economic, institutions, infrastructure etc.), interventions are designed to address any vulnerability of enhance livelihoods perhaps by diversification of income streams" (Morse et al., 2009:3). Since the 1990s, SLA became the dominant approach to the implementation of development interventions by a number of major international agencies. According to Morse et al. (2009) the potential strength of the livelihoods approach is that it mainstreams the environment within a holistic framework. Importantly, the livelihoods approach puts people at the centre of development. Three main activities relating to rural economy are discussed in this section. These activities fit well to SLA as they provide income earning opportunities in rural areas and their success depends on the environment and the climatic conditions they are subjected to. Firstly, for many decades now, rural economies of most developing countries particularly those in Africa and Asia have centred on agriculture and its related activities such as subsistence farming (Morton, 2007; Madzivhandila, 2014).

Even though it is done on a small-scale, agricultural production activities have contributed largely to the income and employment of most rural dwellers. However, in the Caribbean and other small island developing states, most rural and coastal communities have relied more on small-scale fishing and rural tourism. In other words, the most dominant activities in the rural economy which have created formal and informal employment are small-scale farming, rural tourism and fishing (Food and Agriculture Organisation (FAO), 2009; Sookram, 2009; National Department of Tourism, 2011; Teh & Sumaila, 2011). Agriculture or small-scale farming in general, is regarded as one of the core areas of the rural economic base in most developing countries. Small-scale agriculture can be described as an activity by rural producers, predominantly in developing countries, who farm using mainly family labour and for whom the farm provides the principal source of income (Morton, 2007; Madzivhandila, 2014). However, in other areas, the description of small-scale farmers is used to define farmers, who can be found juggling between subsistence production and also production for the market. Madzivhandila, (2014) argues that in recent times it is becoming clearer that, agricultural policy can no longer be solely dependent on when to consider aspects of rural development. However, the diminishing trail of rural activities do not only affect agriculture and its small-scale livelihood activities, since tourism

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

started to surface. These aforementioned activities are also under threat and play a major role in rural employment.

Tourism is also one of the significant contributors to the rural economies of many developing countries (Sookram, 2009; National Department of Tourism, 2011; Ainley & Kline, 2014; Rogerson & Rogerson, 2014). Rogerson and Rogerson (2014) allude to the fact that in areas where it is well managed, rural tourism becomes an important source of the local economic base which rural communities depend on for income and livelihoods. In South Africa for instance, tourism is identified as a priority sector in national economic planning with a clear strategic commitment by local government in support of the National Development Plan (NDP) goals. Furthermore, outside the metropolitan areas of South Africa, tourism has assumed an equally pivotal role in economic diversification towards rural restructuring (Ainley & Kline, 2014; Rogerson & Rogerson, 2014). The success of rural tourism depends on investment and strategising around the quality and quantity of tourism-related services associated with an area where it is offered (Sookram, 2009; National Department of Tourism, 2011; Ainley & Kline, 2014). For instance, many developing countries whose rural communities are found in the coastal areas, have invested in tourism activities related to fishing.

In many countries, small-scale rural fishing or what is considered artisanal fishing contributes to rural livelihoods and in other instance towards GDP as well (Schrank, 2005; FAO, 2009; Teh & Sumaila, 2011). According to Teh and Sumaila (2011:2) the overall "global fisheries provide livelihoods to millions of coastal inhabitants and contribute to most of local and even national economies." It is estimated that, a large number of the world population, about 20 percent, rely on fishing for food sustenance and nourishment (FAO, 2009). That is, fishing provides a reliable livelihood strategy, which can generate buying power during tough economic times. It is not surprising then that in countries such as Fiji and Indonesia, most of the fishing activities including those that are exported are processed in rural areas (Teh & Sumaila, 2011). Teh and Sumaila (2011) wrote that in Fiji, rural fishermen, particularly women, play a major role in the local, national and even international supply of fishing produce. The same applies to Indonesia and also Hong Kong in China, where most of the fishing products are supplied by non-industrialised containers and lucrative live reef food fish trade (World Bank, 2008; FAO, 2009; Teh & Sumaila, 2011).

Overall, the activities of rural economies are characterised by dominance of poor people whose participation is to create livelihoods for the survival of their poverty-stricken households. Hence, with the recent emergence of climate change

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

damages to the rural economies, poor households are trapped and unable to eliminate high levels of vulnerability to poverty and natural disasters (Morton, 2007; Madzivhandila, 2014). In most instances, poor households susceptible to climate change emerge from inadequate socioeconomic, demographic, and policy trends which limit their capacity to adapt to climatic aberrations.

3. EFFECTS OF CLIMATE CHANGE ON RURAL ECONOMIC ACTIVITIES

The Framework Convention on Climate Change (UNFCCC) (2007:34) describe "climate change as attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods." However, it is safe to say that this is still a matter of worldwide debate. The conversion explains "human activities such as burning of fossil fuel and deforestation, produce greenhouse gases that trap heat in the earth's atmosphere as the main cause of climate change" (UNFCCC, 2007: 8). Furthermore, the framework also highlights the fact "that the main human influence on global climate is emissions of the key greenhouse gases (GHG) which are carbon dioxide (CO2), methane and nitrous oxide" (UNFCCC, 2007:8). The UNFCCC (2007:8) suggests that the solution to this will be to apply mitigate measures to "slow down the build-up of heat trapping greenhouse gases and remove them from the atmosphere". Consequently, climate change is regarded as of great concern for all aspects of human life and needs to be addressed amicably (Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015; Asha & Madzivhandila, 2016; Madzivhandila & Niyimbanira, 2016). Its manifestation changes temperature and precipitation, sea levels rise, extreme events (for example, the frequency and intensity of hurricanes) and leads to the destruction of ecosystems. For instance, Trenberth, Jones, Ambenje, Bojariu, Easterling, Tank, Parker, Rahimzadeh, Renwick, Rusticucci, Soden and Zhai (2007) highlight the fact that temperatures in the Caribbean sub-region have been warming at a rate ranging from 0.0^0C to 0.5^0C per decade for the period 1971-2000. Furthermore, Trenberth et al. (2007) report that in the same region, the percentage of days with cold temperatures has decreased since the 1950s, while the percentage of days with very warm maximum temperatures are increasing. Unfortunately, the impact of climate change exerts a powerful influence on the already struggling rural economies.

The impact of climate change on rural economic activities has been observed in many forms. This includes, decline in rainfalls leading to water shortages and increased demand of water in industries such as tourism, agriculture and other

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

sectors (Olsen, 2008; Ding, Hayes & Widhalm, 2010; Fieldsend, & Kerekes, 2015; Asha & Madzivhandila, 2016). Secondly, there has been an increase in frequencies of heavy precipitation in some regions leading to flood damage to tourism infrastructure, agricultural products and other livelihoods, which contribute to rural economies (Morton, 2007; Ding et al., 2010). Looking specifically at agriculture for instance, the bearing of climate change in many less developed countries has damaged production and employment opportunities at the extent that the current farm income represents only less than 2% in total, nationwide (Johnson, 2001).

Seemingly, climate change has impacted agriculture food production systems at all levels. These include, smallholders, subsistence, and pastoral farmers. In countries such as Tanzania for instance, a number of climate related disasters such as flooding, drought, widespread crop failures, livestock deaths and intensification of climate sensitive diseases are constantly being reported (Rogerson & Rogerson, 2014). In the Caribbean Basin of Aruba, Barbados, the Dominican Republic, Guyana, Jamaica, Montserrat, the Netherlands Antilles, Saint Lucia and Trinidad and Tobago climate change is causing a lot of damage to the fishing industry, particularly in areas whose activity is the primary source of food and income (FAO, 2009; Sookram, 2009; Teh & Sumaila, 2011). Marine fisheries' formal and non-formal employment have contributed a lot in most of the economies of the rural coastal areas of these countries (World Bank, 2008; FAO, 2009; Teh & Sumaila, 2011). However, in recent times the contribution has been diminishing. Climate change related stressors such as rising sea levels and flooding contributed to the degradation of coastal and marine ecosystems. Furthermore, warm temperatures are associated with faster depletion of oxygen supply in water thus affecting fisheries (Fick, Myrick & Hansen, 2005). According to Schrank (2005), in countries such as Canada, the impact of climate change on fisheries and its disintegration have been devastating. In Canada the collapse of the cod fishery led to changes in the social structure and dynamics of rural communities as the northern cod moratorium led to mass layoff of over 10 000 fishery workers (Teh & Sumaila, 2011). The layoff of workers and the struggle of a sector which constitutes rural economy due to climate change is also evident in the tourism sector.

In the tourism industry, climate change has altered and interfered with the length and quality of tourism seasons, affecting tourism operations, and influencing environmental conditions that both attract and deter visitors (Sookram, 2009; National Department of Tourism. 2011; Ainley & Kline, 2014; Rogerson &

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

Rogerson, 2014). Furthermore, the direct climatic influences on tourism are driving variations in the whole system of the tourism sector. This condition is due to the fact that temperature is considered to be the most important climatic variable in demand of tourism, because outside a certain range, it affects comfort (Sookram, 2009). The condition also applies to other weather parameters such as rain, wind and also hours of sunshine. Generally, warmer temperatures alter seasonality, heat stress for tourists, cooling costs and cause changes in plants, wildlife, increased water shortages and desertification (National Department of Tourism, 2011; Ainley & Kline, 2014; Rogerson & Rogerson, 2014). On the other hand, flooding due to increased frequency of heavy precipitation and intensity of extreme storms also cause damages to historic architectural, cultural and archaeological assets and other natural resources which contribute to tourism in rural areas. Naturally, tourism activities, either on a big or small scale are vulnerable to climatic variations (Ainley & Kline, 2014; Rogerson & Rogerson, 2014).

In developing countries, climate change negatively influences the minimal infrastructure availability, which is critical for tourism business. In South Africa for instance, the loss of biodiversity in natural conservation in game reserves may impact on their appeal to the tourists (National Department of Tourism, 2011). Ironically and with its sensitivity, the tourism sector is regarded as one of the effective ways of achieving cultural preservation and nature conservation, whilst creating income earning opportunities for the rural communities (National Department of Tourism, 2011). The three rural economies' dependent sectors which are agriculture, fisheries and tourism rely more on the limited natural resource base and favourable climatic conditions and any changes to this interdependent relationship have a severe impact on the environment, livelihoods, local economy and the abilities to create employment opportunities which are already diminishing in the rural areas.

4. EMPLOYMENT TRENDS IN RURAL AREAS

In most of developing counties, rural employment opportunities are more inclined to land, water, wildlife and mineral-related sectors (Salz et al., 2006; Morton, 2007; International Labour Organisation, 2008; International Labour Organisation, 2014; Teh & Sumaila, 2011). In these areas, employment patterns and labour markets are constantly changing and sometimes decreasing due to factors such as technology, trade, finance, demographics, and demand cycles (Morton, 2007; Madzivhandila, 2014). However, changes due to climate change are already having enormous and worse influences on different levels of

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

employment and the labour market. This is because climate change-related disasters directly destroy a large part of rural economies' business capital, affecting the supply-chain and business performance, undermine longer-term competitiveness and sustainability thus leading to job losses (International Labour Organisation, 2008; International Labour Organisation, 2014). The fact that most rural business activities lack insurance and disaster management plans render them more vulnerable to failure when disasters such as flooding, weather storms and drought hit them.

The impact of climate change on agricultural employment is the worst. Agriculture accounts for over 1 billion people employed and is the second greatest source of employment worldwide apart from services (Teh & Sumaila, 2011; Morton, 2007; Madzivhandila, 2014). Hence, because of climate change, in a few years down the line, the majority of these people might be forced to face change in their employment status and even have to seek employment opportunities elsewhere. Already, the agriculture sector has lost its appeal to job seekers due to minimal and seasonal income. Thus, climate change and its influences will perpetuate negative farm workers' and their families' socio-economic conditions, especially with regard to those depending on nature and the environment for their livelihood (Teh & Sumaila, 2011; Morton, 2007; Madzivhandila, 2014). Furthermore, farm workers will be impacted as well through decrease of income and the need to acquire new skills to be able to undertake agricultural techniques necessary to keep production under new climatic conditions. These conditions will also have a huge impact to employment creation and sustainability in the rural fisheries sector.

In 2004, an estimated total of "260 million people was involved in global marine fisheries, encompassing full-time and part-time jobs in the direct and indirect sectors, of which 22 million who are small-scale fishers, are situated in rural areas" (Teh & Sumaila, 2011:8). "A further 123 million were involved indirectly in secondary activities of fisheries (World Bank, 2008: 35). "A further 954 000 jobs were generated by the marine recreational sector at the same time" (World Bank, 2008: 35). This means that a huge number of the people around the globe are relying on fishing as a means of livelihood. However, there are disparities when it comes to fishing jobs, since more people practising fishing are found in developing countries than developed ones. In Asia, fishing activities constitute about 86%, however, in many other industrial regions, there has been a sharp decline in fishing. In Norway for example, the number of fishermen has decreased by 40% (FAO, 2009). Furthermore, most of European countries' fishing activities

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

have declined as well. For instance, fishing activities in this area has gone as low as 0.2 percent. Above all, climate change is having a huge impact on employment activities pertaining to fisheries, the same way as affecting other industries such as Tourism.

Tourism is supposed to be the fastest growing in the employment creation sector in most developing countries, particularly those in Africa, which are rich in wildlife and other nature based tourist attractions. Olsen (2008:5) highlights that, "the hotel, catering and tourism (HCT) sector is one of the fastest growing industries globally". Actually, "at the end of 2007 the wider travel and tourism industry accounted for 10.3 % of global gross domestic products" (GDP) (Olsen, 2008:5). Furthermore, tourism is one of the well-recognised sectors generating significant employment opportunities across the globe. However, there has been a huge decline in job creation by tourism in recent times. This is because most tourism-related activities are vulnerable to climate change. For instance, because of drought and flooding, and increase in sea levels, most natural-based tourist towns have lost their significance for tourists and the majority of tourist activity coordinators have lost their jobs (National Department of Tourism, 2011; Ainley & Kline, 2014; Rogerson & Rogerson, 2014). The irony of the impact of climate change is that, the majority of those affected in rural areas are unable by themselves to devise strategies which can assist them to cope with the inevitable damages caused by climate change.

5. RURAL ECONOMIES COPING MEASURES AND POLICY IMPLICATIONS

The impact of climate change in rural areas of many developing countries are difficult to comprehend (Haggblade, Hazell & Reardon, 2010). Climate change-related stressors have diminished agricultural activities, pressurised rural tourism industry and altered small-scale fishing activities in many rural areas. Unfortunately, statistics have shown that the climatic variations will continue, thus inducing a variety of effects in rural areas of different regions worldwide (Haggblade et al., 2010; Hayes & Widhalm, 2010; Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015). Madzivhandila (2014) argues that the current climate change crisis requires a re-think in development of strategies for rural development and also as a way of creating, increasing and sustaining employment. Furthermore, a re-think in rural policy development which will encourage adoption and usage of technology to create employment opportunities is required. In rural areas of developed countries such as the United States, several forces have combined and are leading significant changes in rural life through

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

introduction or increasing technological skills (Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015). Furthermore, improvement of both physical and ICT infrastructures can play a major role in creating new employment opportunities in rural areas. In addition, physical and ICT infrastructure can also assist in improving the level of education, skills and development of public services in rural areas (Fieldsend, & Kerekes, 2015).

In terms of tourism for example, the strategy should create a rural tourism network and develop proper and efficient disaster management systems which can minimise vulnerability to natural hazards to rural economic activities including household's livelihoods (Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015). Ideally, rural policy change should take cognisance of the fact that rural areas are fundamentally different from each other in many respects, and that a single, 'solution' or 'strategy' for creation of rural employment will not be appropriate (Hayes & Widhalm, 2010not in ref list; Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015). Strategies emanating from rural policy change should aim to improve the wealth-generating ability of rural areas through the creation of new sources of employment, whilst recognising the unique dimension of agriculture, which is currently weakened by climate change (Hayes & Widhalm, 2010). In other words, rural economic strategies should refocus their direction to diversify areas of investment looking at the role which other non-farm activities can play.

In many parts of Europe, diversification of strategies in search of more sustainable rural economic development has been at the forefront (Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015). In these countries, diversification of activities to create employment in rural areas include intensification and investment in non-farm activities and sectors such as "rural mining, manufacturing, utilities, construction, commerce, transport, and a full trail of financial, personal, and government services" (Haggblade et al., 2010:1429). Whereas, in developing countries, diversification of non-farm activities can assist in productively absorbing labours who are losing jobs because of agriculture commercialisation (Haggblade et al., 2010; Fieldsend, & Kerekes, 2015). Haggblade et al. (2010:1430) argue that, there is already existing "evidence from a wide array of rural household surveys which suggests that non-farm income accounts for about 35% of rural income in Africa and roughly 50% in Asia and Latin America." Furthermore, "primary employment data, which offer the most widely available indicator of the scale of rural non-farm activity, suggest that these activities account for about 30% of full-time rural employment in Asia and Latin America, 20% in West Asia and North Africa" (Haggblade et al., 2010).

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

In many other parts of European rural communities, agri-tourism is promoted as a strategy to diversify and promote a more secured socio-economic development (Fieldsend, & Kerekes, 2015). The advantages of adopting agri-tourism are that its activities go beyond issues of economic revival, but integrates natural resources and cultural welfares which contribute towards sustainable development of rural economic sector and livelihoods (Rogerson & Rogerson, 2014). Conversely, in South Africa, it is argued that, even though Agri-tourism benefits can be evidently immense because of its diverse nature, the strategy is largely overlooked in Local Economic Development (LED) debates (Ainley and Kline, 2014; Rogerson & Rogerson, 2014). In other words, notwithstanding its positive implications for local economic development, little has so far been explored on agri-tourism in South Africa. The country has the potential to develop agri-tourism by looking at investing in a variety of activities encompassing life outside the urban environment (Olsen, 2008; Ding et al., 2010; Shemsanga et al., 2010; Rogerson & Rogerson, 2014).

In South Africa, provinces such as Free State, Eastern Cape, KwaZulu-Natal, Mpumalanga and Northern Cape have established themselves as having a potential to grow agri-tourism as a rural economic sector which needs more investment to flourish (Rogerson & Rogerson, 2014). Interestingly, Ainley and Kline (2014) argue that in order to influence farmers to enter into agri-tourism amid climate change challenges in agriculture and tourism, it is best to think about how the investment in the sector will be accompanied by intensive building of business skills and entrepreneurship capabilities for the farmers (Ainley & Kline, 2014; Rogerson & Rogerson, 2014). The capacity building aimed at strengthening this process that should lead to upgrading of agri-tourism products and enterprises in the rural economy. In other words, capacity building in terms of formal and non-formal educational training should be provided "to create an environment that is sustainable for investments and growth, development of entrepreneurial and vocational skills, fostering entrepreneurship and innovation, creating green and decent jobs" (International Labour Organisation, 2014:3). This is important as the majority of the people who are laid-off from either agriculture, tourism or fisheries due to influences of climate change are those in rural areas with less or limited skills to establish other activities which can create sustainable jobs.

6. CONCLUSION AND RECOMMENDATIONS

The purpose of this paper is to discuss the impact of climate change on rural economies and livelihood activities. Some of the major discoveries about this topic were the complex nature within which rural activities are dependent on the

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

conduciveness of the environment and climatic conditions within which they are found. The irony is that many rural economies in developing countries revolve around activities which are nature- and environmentally-based thus vulnerable to climate change-related stressors. In extreme cases, climate change disrupts these activities in ways which lead them to collapse and render the majority of rural work force getting laid-off or losing grip to their livelihood activities. The paper recommended different strategies which need to be devised in order for the rural economies to cope with the impact of climate-change stressors. The coping measures as discussed above includes the integration of agriculture and tourism (agri-tourism) to create a new niche area for employment creation. The paper also recommended the diversifying of the rural economy to non-farm, tourism and fisheries activities. This process can go a long way to revive and strengthen the diminishing and struggling activities in rural areas. Furthermore, the paper, recommended that in order for rural economies and livelihood strategies to be revitalised and strengthened, investment and provision of skills, capacity in terms of building business and entrepreneurship endeavours need to be considered. Moreover, in countries such as South Africa where rural areas remain less economically attractive and since limited economic infrastructure is available, LED and technology investments need to be strategically provided, in order to strengthen and stimulate local rural communities to create employment opportunities for themselves and others.

REFERENCES

Ainley, S. & Kline, C. 2014. Moving beyond positivism: reflexive collaboration in understanding agri-tourism across North American boundaries. *Current Issues in Tourism*, 17(5):404-413.

Asha, A.A. & Madzivhandila, T.S. 2016. Local response to the impacts of climate change in South Africa: insights from local government integrated development planning. *Journal of Public Administration*, 51(1):154-164.

Ding, Y., Hayes, M.J. & Widhalm, M. 2010. Measuring economic impacts of drought: a review and discussion. *Disaster Prevention and Management*, 20(4):434–446.

Fick, A.A., Myrick, C.A. & Hansen. L.J. 2005. *Potential Impacts of Global Climate Change on Freshwater Fisheries.* Gland: World Wide Fund for Nature.

Fieldsend, A.F. & Kerekes, K. 2015. Contrasting prospects for new sources of rural employment in two regions of the European Union. *Rural Development*, 8:7-21.

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

Food and Agriculture Organisation (FAO). 2009. *The State of World Fisheries and Aquaculture 2008.* Rome: FAO.

Haggblade, S., Hazell, P. & Reardon, T. 2010. The Rural non-farm economy: prospects for growth and poverty reduction. *World Development*, 38(10):1429-1441.

International Labour Organisation (ILO), 2008. *Employment and Labour Market Implications of Climate Change.* Geneva: International Labour Organisation.

International Labour Organisation (ILO), 2014. *Climate Change and Employment: Challenges and Opportunities in the Caribbean*. Geneva: International Labour Organisation.

Johnson, T.G. 2001. The Rural Economy in a New Century. *International Regional Science Review*, 24:21-37.

Madzivhandila, T.S. 2014. The misconception of rural development in South Africa: a recipe for socio-economic stagnation. *Mediterranean Journal of Social Sciences,* 5(8):89-93.

Madzivhandila, T.S. & Niyimbanira, F. 2016. Politics of climate change: why should Africa mitigate? *International Journal of Social Sciences and Humanity Studies,* 8(2):92-105.

Morse, S., McNamara, N & Acholo, M. 2009. *Sustainable livelihood approach: a critical analysis of theory and practice*. Geography, 189:1-67.

Morton, J.F. 2007. The impact of climate change on smallholder and subsistence agriculture. *The National Academy of Sciences,* 104(50):19680-19685.

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

Olsen, L. 2008. The Employment Effects of Climate Change and Climate Change Responses: A Role for International Labour Standards? Geneva: International Labour Organisation.

National Department of Tourism. 2011. *Draft National Tourism and Climate Change Action Plan.* Pretoria: National Department of Tourism.

Rogerson, C.M. & Rogerson, J.M. 2014. Agri-tourism and local economic development in South Africa. Bulletin of Geography. *Socio-economic Series*, 26: 93–106.

Salz, P., Buisman, E., Smit, J. & de Vos, B. 2006. *Employment in the Fisheries Sector: Current Situation*. Luxembourg: Eurostat.

Schrank, W.E. 2005. The Newfoundland fishery: ten years after the moratorium. *Marine Policy,* 29: 407-420.

Shemsanga, C., Omambia, A.N. & Gu, Y. 2010. The cost of climate change in Tanzania: impacts and adaptations. *Journal of American Science*, 6(3):182-196.

Sookram, S. 2009. The impact of climate change on the tourism sector in selected Caribbean countries. *Caribbean Development Report*, 2:204-244.

Teh, L.C. L. & Sumaila, U.R. 2011. Contribution of marine fisheries to worldwide employment. *Fish and Fisheries*, 14:77-88.

Trenberth, K.E., Jones, P.D. Ambenje, P., Bojariu, R., Easterling, D., Tank, A.K., Parker, D., Rahimzadeh, F., Renwick, J.A., Rusticucci, M. Soden, B. & Zhai, P. 2007. *Observations: Surface and atmospheric climate change. Climate Change 2007*: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K.B., Tignor, M. & Miller, H.L. Eds., Cambridge University Press, Cambridge, 235-336.

United Nations Framework Convention on Climate Change (UNFCCC) (2007). *Climate Change: Impacts, Vulnerabilities and Adaptation in Developing Countries*. Bonn: UN.

Vol 12, No 1, 2020 ISSN: 1309-8055 (Online) Doi: 10.34109/ijefs.202012115

World Bank. 2008. The Sunken Billions. *The Economic Justification for Fisheries Reform*. Agriculture and Rural Development Department, Washington DC: World Bank.