

Changing Climate - Climatic Whimsies and Its Effect on Sedentarisation Process and Livelihood of Pastoral community at Jigjiga Woreda, Somali Region, Ethiopia (East Africa): (A Brief View on Inclusive Growth and Development Perspectives)

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Abstract

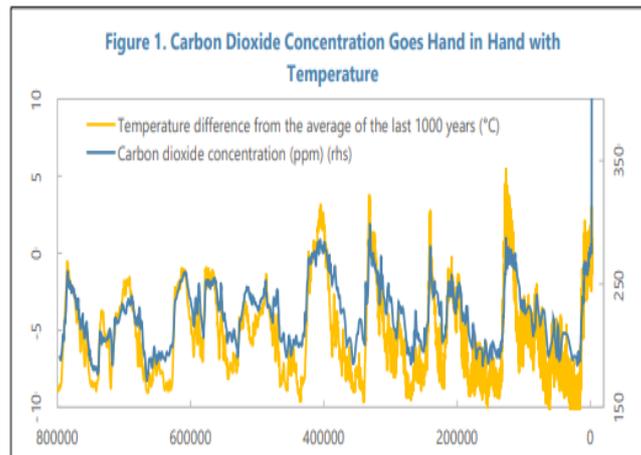
Changes of climate and climatic whimsies have become routine phenomenon throughout the world in general and Ethiopia in particular because of rising unnecessary and intolerable human activities against nature (for say burning fossil fuels, deforestation etc.) compromising human needs over wants. This adds enormous amounts of greenhouse gases to those naturally occurring in the atmosphere, increasing the greenhouse effect and global warming (Climate Action, European Commission, 2021) lead to frequent changes of climate and climatic whimsies which ultimately effecting in many ways the sedentarisation process - livelihoods of pastoral community in Ethiopia in general and Jigjiga in particular. In the African continents the Ethiopia is one among landlocked country in Horn of Africa where approximately 12-15 million pastoralists reside in 61% of the nation's landmass (World Bank, 2003) and (Müller-Mahn, Rettberg and Girum, 2010). The pastoral areas in Ethiopia are regarded as drought vulnerable with chronic food shortage (S, Desta, 2013), therefore, poverty is seen rampant and pervasive. Jigjiga Woreda is one among woredas in Somali Region whose 2.51% out of total population of 277,560 are pastoralists (CSA, 2007). They are so frequent moveable that their mobility has made ultimate challenge towards inclusive growth and development nation as a whole and particular in the region. Therefore, in addressing this challenge, sedentarisation process was found to be a suitable way in many parts of Ethiopia where Jigjiga is not exceptional. The pattern of climate change- climatic whimsicalities have occupied such a commanding position that pastoralist are unable to adapt any suitable tactics or coping mechanisms in order to face the consequences of climate change-climatic whimsies, many sedentarisation programs, processes are jeopardized that are adding many pastoralist communities in the stream of marginalization. Alternatively they move out from this region in safeguarding their livestock and to seek alternate livelihood resources. Therefore, these issues have invited many experts, think tanks, social and human rights activists and society at large to think about a lasting solution in order to see inclusive growth and development nation as a whole and the Somali region in particular. Therefore, within this framework using suitable methodology this study has been undertaken. Accordingly inferences are drawn, findings and conclusions are made; few suggestions are recommended.

Keywords: Climate, Climatic whimsies, Pastoral, Marginalisation, Inclusive growth and Development

Introduction

The term 'climate change' refers to change in the longer term pattern of behaviour of the atmosphere over millennia or, more recently, as a result of natural processes or human activity (Newsham, Andrew, Daleg, Ben, et al, 2018)

Changes of climate and climatic whimsies have become routine phenomenon throughout the world in general and Ethiopia in particular because of rising unnecessary and intolerable human activities against nature (for say burning fossil fuels, deforestation, high mobility of people, intensive livestock dependency and very few to name, compromising human needs over wants. This adds enormous amounts of Carbon Dioxide in the atmosphere and greenhouse gases thereby change natural climate with temperature varieties (see figure 1 below)



Source: (Bhattacharya, Amar, et al; 2021)

Here it is not end, many other drivers(see table ‘A’ below)have direct and indirect impact on earth and climate to make frequent changes and whimsies which ultimately effecting in many ways the sedentarisation process - livelihoods of pastoral community in low income country like Ethiopia in general and Jigjiga in particular.

Table ‘A’ Direct and Indirect Impacts of Drivers

Example of drivers	Example of Impacts	
	Direct impacts	Subsequent impacts
1 Emission of CO ₂	1 Warming	1a Altered crop yield 1b Shift in species phenology
2 Emission of CO ₂	2 Carbon fertilization of plants	2a Increase in forestry yield 2b Change in humidity
3 Pollution of river catchment	3 Fisheries collapse	
4 Plague of crop pests	4 Decrease in crop yield	
5 Forest fire	5 Change in humidity	
6 El Nino event	6 More wildfires	
7 El Nino event	7 Crop Failures	

Source: (Cramer, W., G.W. Yohe, et al; 2014)

Studies shown many regional systems are affected by climate change through many decades in the past. Even extreme weather (Hot or Cold) have brought many changes of life patterns, choices, global mortality patterns etc. in which the Ethiopia may not be an exceptional.

In the African continents the Ethiopia is one among landlocked country in Horn of Africa where approximately 12-15 million pastoralists reside in 61% of the nation's landmass (**World Bank, 2003**) and (**Müller-Mahn, Rettberg and Girum, 2010**). The pastoral areas in Ethiopia are regarded as drought vulnerable with chronic food shortage (**S, Desta, 2013**), Declining rainfall over the 20th century partly explains the slower growth of sub-Saharan economies relative to those of other developing regions (Barrios ,et. al., 2006; Brown, et. al., 2011) that led to bring more people under poverty line and slowly it is seen rampant and pervasive. The pattern of climate change- climatic whimsicalities have occupied such a commanding position that pastoralist(2.51% out of total population of 277,560 are pastoralists (**CSA, 2007**))

in Jigjiga in Somali region are unable to adapt any suitable tactics or coping mechanisms in order to face any consequences come out of climate change-climatic whimsies. To avoid nature made challenges these indigenous people choose the path of frequent movements with their livestock to other suitable locations for safeguarding livestock and to find alternate livelihood resources that is not only posturing ultimate challenge in sedentarisation process but also inviting many conflicts, hampering peace and progress thereby inclusive growth and development.

Jeopardizing of these development activities added many pastoral communities in the torrent of pauperization and marginalization. These issues have been invited many development think tanks, social , human rights ,environment activists and society at large to think about a lasting solution in order to see inclusive growth and development nation as a whole and the Somali region in particular.

Statement of the Problem

Pastoral community other places in the world in general and Ethiopia in particular are mostly socio-economic- political-demographical and geographical marginalized groups (Hogg, 1997). The enormous socio-economic contributions of pastoralists deserve real appreciations not only in Ethiopia but also globally. But climate change and climatic whimsies make this community more vulnerable in finding permanent settlements and livelihood resources that lead to marginalization. Jigjiga Woreda in Somali Region, are marked by rainfall variability, fast return rate of drought cycles, and associated uncertainties to access water resources and grazing for animals feeding (Conway and Schipper, 2010). These recurring situations have invited many think tanks to find sustainable solutions and to give a new definition of inclusive growth and development.

Research Questions

The following research questions are developed to find suitable answers.

- What mechanisms can be developed so that climatic challenges can be possible to convert opportunities?
- How can local adaptation techniques be promoted as a resilience strategy?
- How to develop a path of development for this marginalized community so that it would be easy to redefine the concept of inclusive growth and development?

The Scope and Significance of the Study

This study has tried to focus different issues of climate change and its impact on a particular community i.e. pastoral at Jigjiga Woreda, Somali region in Ethiopia (Sub Saharan Africa). Many challenges that are faced by the pastoral community in losing their livelihoods during sedentarisation process in a particular area discussed this research and tried to find sustainable solutions of their vulnerabilities. Therefore, this study has made a direction to find livelihood diversification among pastoral communities in the study area creating through better adaptive strategies and mechanisms in the frequent conditions of climate change and whimsies. Besides, the findings of this research will be greatly helpful to academics and researchers for further research. The findings of this research will also be significant for making better inclusive policies in near future so that development agencies will have a direction to participate in the development activities particularly pastoral communities efficiently.

Literature Reviews

There are many studies conducted in the past addressing the issues on climate change and climatic whimsies and its impact on indigenous people like pastorals in many ways like **(Sandford, 1983; Behnke and Scoones, 1993)** found “Mobility in this way allows them to track changes in the dramatic fluctuations in feed supply”. **(Oba and Lusigi, 1987)** found “The semiarid regions experience highly variable rainfall and drought, fodder availability fluctuates widely through time and space”. **(Jarvis, 1993; Marshall and Hildebrand, 2002)** shown “The traditional system, which is flexible and responds quickly to changing environmental conditions, is well suited to the ecological and sociological conditions of the Sahel Drought”. **(Behnke, 1994)** expressed “Pastoralists are mobile, allowing them to respond quickly to fluctuations in resource availability and thereby to maintain their herds and other assets as well as their productivity” **(Desanker, et. al; 2001)** concluded that “Climate change would result in sea-level rise, coastal erosion, saltwater intrusion, and flooding”. They predicted that “these changes would have a significant impact on African communities and economies”.

(Crutzen, 2002) “Indeed, economic activity has for the past two centuries – and particularly the past seventy years – driven environmental change on a global, even geological scale.”

(Markakis, 2004) found “The exclusion of pastoralists from the national political, economic and social life dates back to the colonial era. The colonial enterprise interfered with the pastoralists’ system and led to the progressive deterioration of their livelihoods and social fabric”. **(MA, 2005)** “Applied the concept of ecosystem services specifically to ‘human well-being and poverty alleviation’”

(Ziervogel, et. al., 2006) “viewed “Structural factors need to be addressed at regional, national and potentially international levels and are critical in determining whether local livelihood and coping strategies become meager ‘strategies for survival’ or ‘strategies for success’” **(Brooks, 2006)** shown “Pastoralism developed autonomously across the world’s dry lands. It is still widely practiced today and remains a dominant feature of rural East Africa”. **(Devereux, 2006)** found “The vulnerability of pastoralists to drought is very complex and diverse, and mechanisms of coping with drought are constrained by the others”. **(Devereux, 2006)** found “For instance, between 1978 and 1998 alone 15 droughts occurred in these areas”. **(UN OCHA, 2006)** informed “Cyclical droughts are a defining feature of pastoralists’ way of life in this region and ‘local livelihoods are sensitively adapted to the certainty’”. **(Barrios, et. al., 2006, Brown, et. al., 2011)** found “.Declining rainfall over the 20th century partly explains the slower growth of sub-Saharan economies relative to those of other developing regions “.

(Brown and Teshome, 2007) shown “Arid and semi-arid areas of the country, where rainfall is low at rain times and abnormally low every few years, drought is considered as a normal part of life”. **(Boko, et. al., 2007)** viewed “Overwhelming scientific evidence indicating that climate change is no longer a distant prediction but a reality whose imminent impacts on ecosystems and people are often underestimated”. **(O’Brien, et. al., 2007)** shown “Socio-economic, institutional and technological forces and structures that shape the vulnerability context local capacity to respond to change”. **(Madswamuse, et. al., 2007)** “Largely focused on the agriculture sector and on the intensification of livestock production (ranching). **(Osahr, et. al., 2008; Bunce, et. al., 2010)** found “Impacts on livelihoods related to climatic trends, climate variability, and extreme weather events. Impacted natural assets include land, water, fish stocks, and livestock”. **(Carr, 2008, Jonsson, 2011, Nightingale, 2011; Byg and Salick, 2009)** found “Impacts of rising temperatures, increased variability, and weather extremes on crops and livestock of indigenous people”. **(Krätli, 2008)** explained “Exploiting unpredictability as an opportunity in this manner, coupled with a deep understanding of the relationship between humans, animals and the environment, ensures the resilience of the pastoral livelihood system in the face of hardship”. **(Pantuliano and Mike, 2008)** found “Ethiopia pastoralist livelihoods systems are becoming increasingly vulnerable to drought, conflict, population pressures, and

government policies on land tenure systems". (Riché, et. al; 2009 , Kassa, Beyene and Mangi,2005) shown "Pastoralist drought response mechanisms are marginalized by increasing land degradation, conflicts over scarce resources". (Srinivasan, et al.; 2008) "The poor are typically more sensitive to impacts on ecosystem due to their greater reliance on natural resource based livelihoods, and their vulnerability to natural hazards. This also applies globally, as poorer nations have suffered more costs and reaped fewer rewards from environmental changes"

(Pastoralist forum Ethiopia, 2009) shown " A range of tailored programs and policy were introduced to pastoralist areas. These are improving pastoral livelihoods and asset bases, addressing inadequacy/lack of basic social services, addressing institutional issues related to pastoralists". (Rockström, et al., 2009) expressed "Global climate change is a 'wicked' problem that is unprecedented". (Boy d and Juhola, 2009) viewed "Climate change will incur impacts at a scale and speed that is unparalleled." (Jones and Olken, 2010) found" Temperature shocks have negatively affected the growth of developing countries"

(Conway and Schipper, 2010) viewed "Horn of Africa and Ethiopia in particular is often cited as an extreme case where the impacts of present and future climate changes could lead to disasters". (Eriksen, et. al.; 2011) viewed "Attention being paid to the need for global transformation towards more sustainable pathways". (Dell, et. al.; 2012) shown " In low-income countries, careful tracking of incomes and temperatures over an extended period". (IPCC, 2014) indicate " Effective, strategies to adapt to climate change should take into account the full range of risks pastoralists face, and be integrated with development and mitigation approaches".

(Stern, 2015, Weitzman, 2011; Westerhold, et. al; 2020) emphasized " If GHG emissions continue unabated at the current pace, humanity has only about a decade before it risks triggering catastrophic climate scenarios that would threaten the livability of the planet for itself and other species". (Herrero, M, Addision, J, et.al; 2016) found "The high levels of climatic variability that characterised the global rangelands suggest that pastoralists should be well able to adapt to a changing climate". (Addision, J, et.al; 2016) expressed "Several analyses of pastoralist sensitivity to climatic shocks have indicated entry points by which pastoralist livelihoods can be better supported in response to a changing climate". (The Global Commission on the Economy and Climate, 2018, IMF, 2020) have informed "Investment in sustainable and resilient infrastructure is central to accelerating the transformation" (The Global Commission on the Economy and Climate, 2018) also informed". Indeed as the New Climate Economy has underscored, it can "unlock the inclusive growth story of the 21st century"

(De Fries, et. al.; 2019) viewed" The costs and risks of climate change have been systematically underestimated Climate change disproportionately affects the poor". (World Bank, 2020) viewed "By 2030, it could push over 100 million people into extreme poverty, primarily because of disrupted food production, lower labor productivity due to deteriorating health, and natural disasters" (Hessler, Uwe, 2020) viewed "In 2020 the [World Economic Forum](#) ranked climate change as the biggest risk to economy and society".

.(Stern, 2021) viewed " The evidence mounts that climate action is not a cost in terms of growth, development and jobs but rather an attractive path to more inclusive, resilient and sustainable growth." There were many studies conducted in the past as mentioned, the findings of each study indicate mostly causes and consequences of climate change on human growth and development in a particular area and time and the solutions but findings of very few studies were found to be indicated about consequences of climate change and climatic whimsies on the livelihoods linked with inclusive growth and development of indigenous people like pastorals. Therefore, it creates research gap to undertake this study.

Theoretical Formulations:

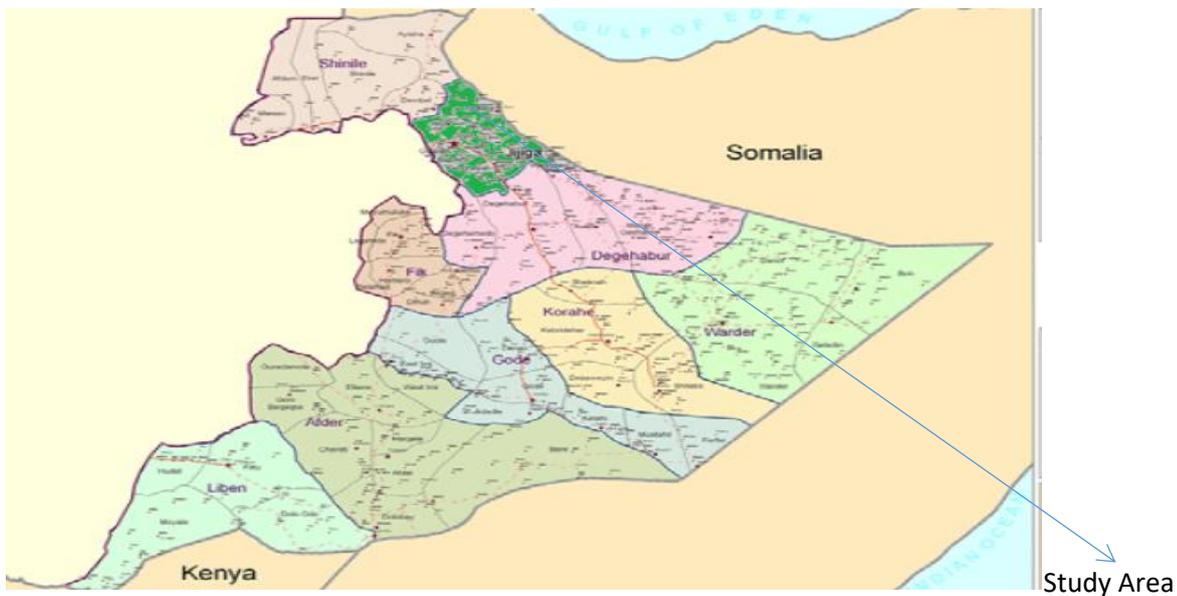
Marxist Schools' developed theory of dependency thoughts shown "class struggle as the engine of social change and development(Marx, Kal, 1976) "and also **(Joseph ,Stiglitz ,1999)**, has seen development more on modernize ways than traditional at the same time. **(Alovi and Shanin, 1982)** viewed " Free World" model of development through adopting technological change" . **(Procacci ,1991)**."Pauperism, Procacci explains, was associated, rightly or wrongly, with features such as mobility, vagrancy, independence, frugality, promiscuity, ignorance". **(Sachs, 1992)** analyzes "The central constructs or key words of the development discourse, such as market, planning, population, environment, production, equality, participation, needs, poverty". **(Escobar ,1995 and 98)** "Perhaps captures the spirit best when he writes: 'the remaking of development must start by examining local constructions, to the extent that they are the life and history of the people, that is, the conditions of and for change". However **(Sen, 1990)** defines development as "Comparing human basic needs and choices in different socio-economic-political-demographical and geographical circumstances where he viewed about equal participation of human beings to get fruits of the growth, not just the richest few"..

Materials and Methods

Selection of Study Area and about Study Area

Among 12 Woredas in the Fafan Zone in Somali Region, Jigjiga was selected purposively

Study Area



Map. 1. Source. (CSA, 2007)

Demography

Based on the (2007) Census conducted by the [Central Statistical Agency](#) of Ethiopia (CSA), the Somali Region consist about population (7,445,219)(CSA,2007&2008) , consisting of 3,472,490 men and 3,972,729(CSA, 2007) are women. 20% of the population, 80% were pastoralists and farmers (CSA, 2007). With an estimated area of 327,068 square kilometers, this region has an estimated density of 20.9 people

per square kilometer. For the entire region , 685,986 households were counted, which results in an average for the region of 6.8 persons to a household, with urban households having on average 6 and rural households 6.5 people. Ethnic groups include [Somalis](#) (99.2%), [Amhara](#) (0.06%), [Oromo](#) (0.46%), foreign-born Somalis (0.20%) and Gurages (0.08%). The population was projected to be 11,748,998 in 2017 (CSA, 2007)

Agriculture

In 2005 that farmers in the Somali Region had 459,720 cattle (representing 10.19% of Ethiopia's total cattle), 1,463,000 sheep (20.66%), 1,650,970 goats (50.02%), 1,291,550 donkey (30.66%), 5,3165,260 camels (96.2%), 154,670 poultry of all species (0.5%), and 5,330 beehives (0.12%)(CSA, 2007) .

Research Design

This study has adopted descriptive research design with quantitative and qualitative (Mixed Methods) approach.

Universe:

Universe is the totality of objects under investigation (Adam and Kamuzora, 2008). Total Universe of the study area is 9250(CSA, 2007)

Sampling Techniques and Procedures

In this study, Non probability and probability sampling methods were adopted. First Fafan Zone was selected purposively then Selected Jigjiga Woreda purposively. Out of total 10 kebele, only two kebeles were selected randomly. Taking into the accounts of universe using Yamane formulae(1967), the total sample size (154) (as mentioned below) had been selected and proportionately distributed between two kebeles in this study.

Sample Size Determination

The sample size is the subset of population used as representatives and observation to provide the statistical information about universe. This study used a simplified formula provided by Yamane (1967) to determine the required sample size at 95% confidence level, 0.5 degree of variability and 8% level of precision.

$$n = N/1+N(e)^2$$

$$n = 9250/1+9250(0.08)^2 = 154$$

Data Sources and Collection Method

Quantitative and qualitative (both) data were collected through Primary and secondary sources.

Through using suitable methods like participatory observation, focused group discussion and case studies etc. were adopted using tools (questionnaires and interview guides). Each respondent was explained about importance of this study. Each respondent was given suitable time to attend face to face interview in a particular day for discussion and answering the questions. To obtain more valuable datas, focused group discussions with at least 15 people of various age groups were conducted. Each discussion took atleast 40 minutes duration. Secondary datas were also collected from different related scientific books, journals, maps, reports and other research publications to supplement primary datas besides case studies for few cases were adopted.

Data Analysis Method

Quantitative data so collected were edited, coded-decoded, tabulated, processed for analyses using statistical tools and content analyses for qualitative data were also used accordingly inferences are drawn conclusion and recommendations are made.

Issues and Discussions

It is true that the whole Africa is facing greatest development challenges in this century due to rapid climate change and climatic whimsies where Ethiopia is not exceptional. This climatic vulnerability has led too many complexities and criticalities in answering the questions of plunging off the large sections from severe poverty, developed low adaptive capacity thereby flourishing vulnerability. Thus the failing challenges from climatic vulnerability has raised many questions against effectiveness of Institutions in order to deal with climate challenge-inclusive growth and development. Despite the increased and urgent attention paid to the promotion of inclusive growth, there is no unanimous definition of the concept. A commonly used definition is that employed by the (World Bank,2009), which defines. "Inclusive growth as an absolute reduction in poverty associated with the creation of productive employment rather than direct income redistribution schemes"(K, Alexander,2015). However, the present socio-economic-political-demographical and environmental scenarios have forced us to redefine the definition of the concept of inclusive growth which has broadly linked with development i.e. creating more opportunities for gainful employment, equal access to resources through social inclusion; developing social safety nets to reach to unreached people in the society. This is possible through able leaderships, strong commitments by governments in issuing effective policies and programs specially focused on vulnerable people like pastorals, ethnic minorities, health challenged etc. through active participation of these vulnerable people. Today in 21st century, in the era of modernisation and post-modernisation, when world think to establish human existence in Moon or other planets, the certain community like pastoralists at Jigjiga in Somali region are particularly finding difficulty to settle themselves in the process of sedentarisation for permanent livelihoods. The Socio-economic and political challenges are on one hand and climatic vagaries on the other ultimately pushing them into the brink of inequality, poverty and marginalization. Thus their indigenous identity is on the verge of aloof due to loosing of pastoral way of life (Patrick, 1994) there by inclusive growth. (Bourguignon , 2004) rightly emphasized that understanding the two-way relationship between growth and inequality is the real challenge for producing a development strategy focused on fostering pro-poor or inclusive growth. Promoting inclusive growth requires policymakers to address both growth and income distribution, so it requires an understanding of the relationships between growth, poverty and inequality (K, Alexander, 2015). As a result, more illiteracy and livelihood still insulated in primary sectors (see Figure 2 below).It was found that the majority 120(78%) respondents are illiterate and very less only 34(22%) have primary level of education. This indicates the majority people are illiterate in the study area.

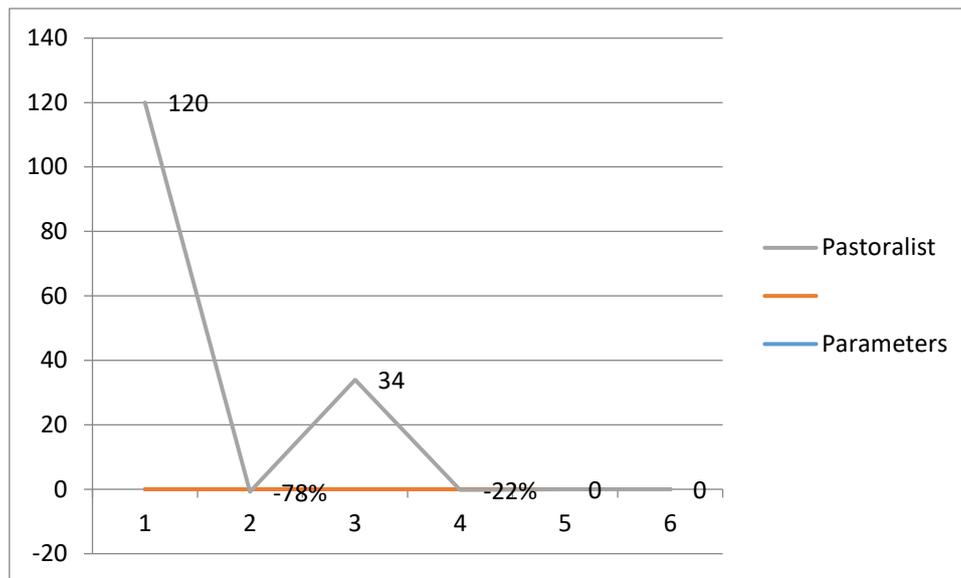


Figure 2. Literacy level of Respondents

Their livelihoods still depend on the primary sectors and their expenditure patterns are made only to meet the daily needs. Therefore, (see Table B below) shown that the majority 110(71.42%) respondents viewed the major source of income comes from livestock at the same time a meager respondents around 39(25.32%) viewed they have earning through daily wage, only 05(3.26%) of respondents income depend on agriculture. And on the other side the majority 100(64.70%) spend their income on food, almost same 12(7.84%) health and cloth respectively.

Table B Monthly Income and Expenditure patterns of Respondents

	Agriculture	05	3.26(%)
	daily wage	39	25.32(%)
	Livestock	110	71.42(%)
	Total	154	100%
Expenditure patterns	Food	100	64.70(%)
	Health	12	7.84(%)
	Education	22	14.37(%)
	Cloth	12	7.84(%)
	Others	8	5.22(%)
	Total	154	100(%)

This is an important cause that these people are largely affected by climatic whimsies because primary sectors (Agriculture, livestock production and productivity and other related activities have direct link with environment and climate. Growing grazing lands for livestock stocking, feeds and forages for livestock, water resources all are paramount resources depend fully on rain. The skeptical climatic behavior in the way of untimed rain or no rain invited drought for the past continuous years which ultimately had significant effects on livestock production, productivity of pastoral community and their daily earning potentials in Jigjiga in Somali region. It also invited ill performance in sedentarisation process (a development activity) and household level economic activities that forced major displacements (See Fig 3 below). The adaptive cost to mitigate climate changes is becoming so high that it becomes difficulty to this people to adapt any technique in becoming more climatic resilient. Therefore, automatically they become vulnerable to frequent changes of climate, climatic vagaries and are paying their dividends which ultimately pushing them to the brink of miseries. Thus these situations have attracted many think tanks across knowledge societies, governments, political spectrums to rethink and redefine the concept of inclusive growth and development.

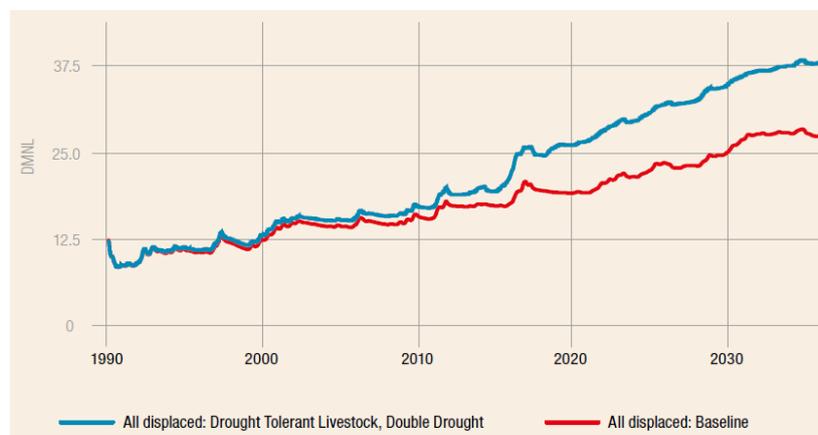


Figure 3-Model Simulation: Percentage of the total pastoralist population displaced in relation to drought

(Source.Ginnetti, Justin and Fran,Travis,2014)

Giving value to traditional indigenous knowledge become crucial to see success of any development activities.(Escobar ,1995 and 98) rightly pointed out ‘the remaking of development must start by examining local constructions, to the extent that they are the life and history of the people, that is, the conditions of and for change”. This brings the importance of local-level needs, culture, traditional values and their inherent knowledge acquired generation wise through much traditional beliefs and practices that can only safeguard pastoral identity as well as development in the community level.(See Figure 4 below). It explains about the indigenous practices for rainfall prediction by pastoral community in the study area. Here we see the majority 134(87%) respondents perceived that variability of rainfalls occur at late onset (traditional methods), very less around 10(6.49%) perceived rainfall variability occurs at early onset. Almost same 5(3.24%) respondents either have no knowledge or perceived that no change of rainfall variability take place in the study area. This shows the at late onset (traditional ways) rainfall variability takes place in the study area.

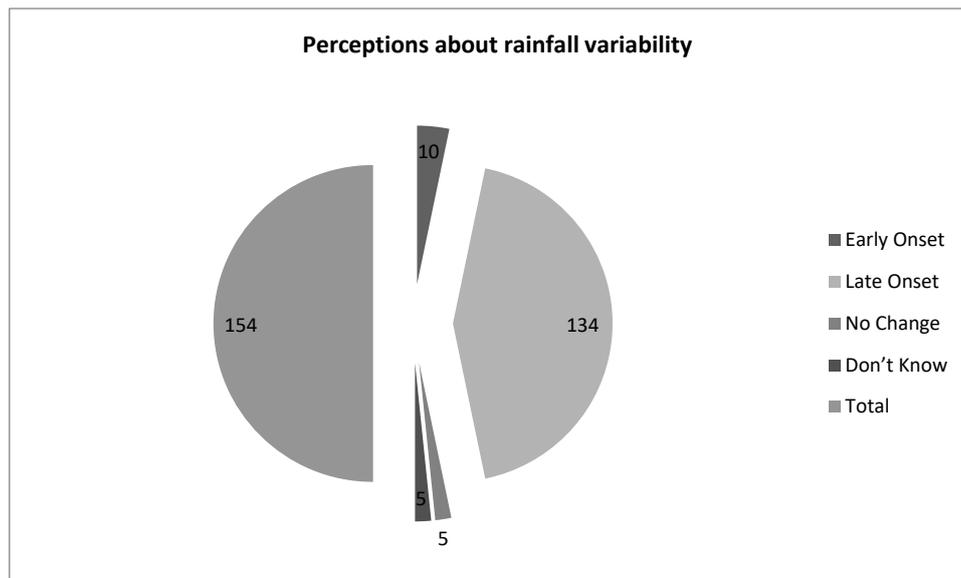


Figure. 4. Indigenous practices of climate prediction by respondents

Here it is not end, the pastoral community sometime try to build up their capacity to cope up with climate change in many ways with governments supports and mechanisms as follows:-

Herd Diversification:

Through focused group discussion and also applied participatory observation methods it was noted that under conditions of environmental variability, an opportunistic stocking strategy requires, in addition to herd mobility, species diversification (cattle, goat, sheep, and camel) and emphasis on incentives on primary productivity. This is one way of the restocking capability (ability to reproduce in a short interval) considered as important elements in both production systems (See Table C below). Here it shows the majority 78(50.64%) respondents they prefer one type of species diversification, little less 56(36.36%) prefer only two types remaining only 20(12.98%) prefer three types of species diversification as a adaptive strategy and copying mechanism for alternate livelihood options.

Table C Preference of Herd Diversification by the respondents

No of Species	Pastoralists	Percentage
One Type	78	50.64
Two Types	56	36.36
Three Types	20	12.98
Total	154	100

Livestock Raiding

Through focused group discussion and also applied participatory observation methods it was also noted about the livestock raiding has long been one of the strategies used by livestock owners to rebuild their herds after the occurrence of drought. In some literature, it appears as “politics of the gun” to express the extent of violence (Hendrickson, et. al., 1996). We have also understood that livestock raiding is a practiced mostly at the time of environmental stress, in certain cases it is considered as a cultural practice to demonstrate group strength or when there is a need to rebuild the livestock resource lost due to drought (See Table D the loss of Livestock due to recurrent droughts in the past by the pastoral community) in Somali Region. It shows during 1999-2000 Somali region was badly affected by drought. (FAO, 2000).report

it has been estimated that up to 8.7 million were affected by the drought that beset Ethiopia in 1994. This drought resulted in the death of about 1 million people and 1.5 million livestock

Table D Lost of Livestock (Year wise) due to droughts

Drought Year	Regions	Affected livestock species (%)				
		Cattle	Sheep	Goat	Equines	Camel
1972/1974	Afar	72	45	34	-	37
1983/1985	Oromia					
	Borana	60	-	-	-	-
1995/1997	Oromia					
	Borana	78	-	-	-	45
1999/2000	Afar	Up to 45	Up to 15	Up to 15	-	Up to 25
"	Oromia					
"	Bale	50	35	20	20	15
"	Somali	Up to 80	60	40	-	35
"	South	50	20	20	-	15
	Oromo					

Source: Poverty Reduction Strategy and Pastoral Development , 2001

Proactive and Preventives Measures.

1) Timelines of the Response

There was a significant improvement in terms of alertness and geographic coverage between 2011 and 2016-17, with some variation between the three countries. The quicker triggering of the response in Somalia in 2016, and even more in 2017, was possible due to robust early warning information which was provided more quickly through different formal and informal channels, the presence of more actors in the field and the engagement of key donors (Francois, et.al., 2019)

2) Governments' Interventions.

Through some studies it was found some governments interventions in the forms of projects or collaborative projects to promote sedentarisation process as a mark of inclusiveness in the pastoral areas of Ethiopia (say for The Yabello project (1973) attracted settlements around the new water points, resulting in sever overgrazing. World Bank funded the Second Livestock Development Project (SLDP)(1973). This was initiated to develop an integrated market and stock route system in order to improve livestock off take. Third Livestock Development Project (TLDP)(1975-84) and SORDU(1988) . This project was implemented under the Forth livestock development project (FLDP). (Taffese, 2001) in his study pointed out that although the above-discussed projects were initiated with good interventions, they could not achieve a sustainable development in the pastoral areas, mainly due to wrong underlying assumptions, top-down approach and lack of knowledge in the traditional pastoral systems.

Case Studies

Case No.1	Mohamed Abdi(Name Changed) is a pastoralist living in Jigjiga Woreda. While taking interview he informed about his present socio-economic condition. He was planning for permanent settlement in that area but due to climatic vagaries, he moved to other place with all his livestock. He explained about death of livestock due to shortage of water and food . He lost his earning potentials. Now he is searching for alternate livelihood options. He is living with six grown up children.
Case No. 2	Another case study revealed that Mohammed Jemal Bar (Named Changed) a pastoralist was living at Jigjiga peacefully with his family. But continuous droughts have snatched his peace. He lost livestock. He is effected by chronic disease . He cant work like earlier, whatever savings he had, lost everything for his treatment. He has eleven children. Now his children are working as daily wagers.
Case No. 3	Condition of another pastoralist was studied. Her name was Salima Yusuf, a lady of around 50 years of age. She lost her husband during conflicts while using common resources for livestock when they moved out to near by Woreda in Jigjiga. Now she is working as house security in the city. She informed about how had she lost her husband with full tears in her eyes. She had marriageable daughters but don't have any capacity for their marriage. Since there is no awareness about governments supports, she is unable to access resources.

Theoretical Application:

On the application part of theoretic thoughts by the eminent scholars and stalwarts like (**Marx,Karl,1976**)had seen class struggle as the engine of social change and development, (**Joseph ,Stiglitz ,1999**) saw the development more on modernize ways than traditional. (**Alovi and Shanin, 1982**) viewed "Free World" model of development through adopting technological change". But they have not shown much enthusiasm to direct to how technological changes would be made easy acceptable by the marginalized and pauperized people so that free world model of development could be created. (**Procacci, 1991**) envisaged pauperism associated, rightly or wrongly, with features such as mobility, vagrancy, independence, frugality, promiscuity, ignorance. Though Procacci's thoughts are much common with Marxist thoughts of alienations and pauperization but in his paper it was found lagging to define the particular group of people those are pauperized , of course he had well defined the consequences of pauperisms. (**Sachs, 1992**) linked market, planning, population, environment, production, equality, participation, needs, poverty etc. with his development thoughts. (**Escobar, 1995 and 98**) also see the development in examining with local constructions, to the extent that they are the life and history of the people, that is, the conditions of and for change. Sachs and Escobar both have shown their development thoughts analyzing the issues like environment, production, planning, marketing, equality, participations etc. But they have lagged on in giving more important towards pupil's choices. We should not forget human natures. All human beings have their own choice, like, dislike etc. Without considering that no inclusive growth and development are meaningful. However **Sen** viewed about development was comparing human basic needs and choices in different socio-economic-political-demographical and geographical circumstances through equal participation of human beings to get fruits of the growth, not just the richest few. His message of development as freedom has had enormous impact on whole spectrums of development issues. Though it is quite challenging to accept one among development thoughts to address the real issues and challenges of this study but after critically analyzing all the development thoughts, it is felt pertinent to apply Sen.'s development thoughts in this study.

Conclusion

The exponential growth of population in Africa in general and particularly in Ethiopia overlapping with human needs by wants are natural phenomenon today. Therefore, time has come to bring new innovations in each step of development activities where inclusive growth is concerned so that the marginalization trends of certain segments of a society like pastoralists can be curbed. We can't avoid climate change and climatic whimsies any more. We all have to survive with this. Therefore, we need to strengthen the links between and among traditional practices (like indigenous knowledge, beliefs, with modern methods (like using Computer, Information communication systems, Geo positioning systems, Satellites etc.) so that traditional and modern methods of human development practices can be valued which ultimately will create a strong relational bonds in ecosystem. Pastoralists are nature lovers, live in the hillocks and forest areas. It becomes very difficult for any institutions to find out their exact locations of living, therefore, they automatically deprived off getting social benefits thereby inclusiveness. Using GPS systems and proper mapping will definitely bridge the gap of that difficulty. In addition we should be more focused to optimal use of digital platforms to reach to unreached through better management of environment and ecosystems. Many developed and developing countries have got enormous benefits in connecting one Institution with other institutions for their mutual benefits in giving respects to environment and ecosystems. Understanding social needs, creating area wise connectivity, progressed towards inclusive growth and development with sustainability, no tools can be better than any digital tools. Therefore, it is need of the hour for development thinkers across academic disciplines, socio-economic-political--environment activists to engage for innovating new tools and techniques in order to mitigate new challenges appear before human kinds due to climate change and whimsies(see recently International Monetary Fund(IMF) has urged to create new trust to bolster work on climate resilience(Reuters,2021) where they urged support to the new trust saying the global lender's action were vital to helping countries better address the rising toll of climate change."(Reuters, 2021). Within this understanding a few suggestions are recommended for formulation of better policies and programs which can be seen more effective and acceptable by the indigenous people like pastoralists so that they can get better world to live.

Suggestions

- Certain mechanisms should be developed to make better coordination and creating solidarity among local –regional and central levels of authorities to take proactive and preventive measures in mitigating climate related challenges.
- It needs to bring different stakeholders on boat in order to make appropriate decision during need hours.
- Pastoralists should get opportunity to share their experiences, knowledge, information and skills among their communities, sectors and institutions.
- Short-term and long-term options to use optimally the natural resources may be open to each pastoral society in order to enhance indigenous capacity building and developing copying mechanisms.
- To focus more on employment diversification and long-term transformation approaches to different households taking into account their socio-economic background.
- To strengthen the institution's pillars to ensure effective delivery of policies and programs in order to see smooth process for sedentarisation activities - inclusive growth and development.
- To make more options open for development agents in order to make them better understanding about the ground reality to ensure effective measures on time.

- It is last but not least that we need to take supports of improved technologies and use them optimally using appropriate platforms to curve unnecessary human activities against nature, to reduce emission of Carbon dioxide in air, channelized greenhouse gases for any productive activities etc. so that it can make better living for all.

Pastoral child vulnerability



Pastoral settlements after being displaced



Temporary settlement of pastoralist before sedentarisation process



Knowledge sharing platform in the village



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