

# Local Institutional Effectiveness in Supporting Climate Resilient Pastoralism in Kassala State of Eastern Sudan

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**Abstract:-** The study aimed to assess climate change adaptations responses of institutions towards pastoral communities and to examine the effectiveness of their role in facilitating and supporting climate change adaptation in pastoral sector in River Atbara and New Halfa Municipalities of Kassala State Eastern Sudan.

Approach used is Climate Vulnerability and Capacity Analysis (CVCA), (2009) based on CARE, community based adaptation framework. Tools are desk research, check-list for consultations, meetings, interviews in addition to Venn diagram questionnaire. The study is conducted for formal and informal institutions at local and state level. Collected data were coded, computerized and analysed using the Statistical Package for Social Sciences (SPSS). Key findings were that the Gov. institutions have well defined roles and mechanisms, they are directly and indirectly related to climate resilient actions, their mission is to provide weather and climate information; social and health services and development activities to ensure adaptations and sustainable development. Institutional engagements are wide-ranging across the Gov.; informal institutions and NOGs at State or local levels .The all-inclusive representatives' institutions mentioned that different plans and activities within their responsibilities, contribute to reduction of vulnerability of the pastoral groups including and not limited to: enforcement of legislations ,rangelands and forest improvement and management; water source development; provision of climate information and services and capacity building. Enabling factors which have been discussed based on CARE, community based adaptation framework include: Promotion of climate-resilient livelihoods ; Climate related risks reduction; Capacity development and addressing underlying causes of vulnerability. Results also revealed that, enabling factors affected by low institutional capacities; absence of national climate policy and measures; weak regulatory framework to support adaptation options regarding

pastoral sector and low levels of information availability and accessibility and dissemination. Early warning systems and climate information have an important role to play in promoting adaptation depending on people ability to use the information effectively. Climate data forecasting are not well distributed , low voice of pastoralists and local institutions in local planning processes the legislations enforcement and policy adoption dimensions are crucial barriers for pastoral communities in the area to build climate-resilient livelihoods .The study recommended that the pastoral communities in the area have to build climate-resilient livelihoods and considerate the conciliation between the community and and formal policy maker institutions.

**Keywords:-** Institutions; Pastoralism; Kassala, Climate related Risk; Climate Resilient.

## I. INTRODUCTION

Institutions are the formal and informal rules and norms that structure citizens' rights, entitlements, opportunities and voice. They shape all human interaction, including the family, community, and political and economic spheres, influencing how societies develop. The patterns of behaviour generated by institutions can be either positive or negative for development outcomes (Scott, 2001, Carter, 2014)

There are three types of local institutions relevant to climate adaptation that can be defined as: government Gov.) civil society organizations (CSOs) and private sector. The formal and the informal forms, affect the livelihoods impacts of climate related risks through a range of essential functions they perform in rural frameworks: information gathering and dissemination, resource mobilization and allocation, skills development and capacity building, providing leadership, and networking with other decision makers and institutions (Agrawal and Perrin, 2009).

In Sudan, there are many forms of formal and informal CSOs national and international ones, which have been functional implementing donor funded projects in the sphere of agriculture, animal production, socio-cultural and humanitarian assistance and the environment at large. Other informal CSOs include: Agriculture and livestock producers' Associations (ALPA); Native Administration (NA); Community-based organizations<sup>1</sup> (CBOs) (Mustafa,2015).

Responsive local governance for climate adaptation is constrained by weak technical and managerial capacity, poor linkages with other institutions at different levels, weak systems for gathering and disseminating information, and unclear mandates and conflicting priorities between levels and institutions of government. This has particularly serious implications for the poorest and most vulnerable groups that are frequently the most adversely impacted by climate stresses (Agrawal *et al.*, 2009).

Agrawal ,2008, reported that, institutions influence adaptation and climate vulnerability in three critical ways: they structure impacts and vulnerability; they mediate between individual and collective responses to climate impacts and thereby shape outcomes of adaptation; and they act as the means of delivery of external resources to facilitate adaptation, and thus govern access to such resources. Hence, an institutional linkages framework highlights the role of institutional partnerships in facilitating adaptation and drawing from social network analysis.

Recent studies have shown that the most effective way of adapting to changing climate conditions in poor countries is to rely on local institutions that have well established and sustainable mechanisms to deal with extreme climate conditions (Agrawal, 2008).

Institutions link individuals with collective responses and provide the framework within which households and groups choose adaptation practices. Institutions are the media through which external interventions reinforce or undermine existing adaptation practices. However, despite the central role of local informal institutions in rural communities' adaptation, they are rarely supported by government and external interventions. When external support is provided, it is channelled through formal institutions. When external public institutions get involved in adaptation practices, their relationships are more often with formal and informal local civil institutions (Agrawal and Perrin, 2009).

In Sudan experience the percentage is very low on adaptation knowledge among institutions, ARC (2013) reported that, use of science-based evidence in developing climate related policies, strategies, and plans, was found to be very low. However, the extent of use of scientific information in developing policies and strategies on climate change in Sudan was studied in documents submitted to International

<sup>1</sup> are organized bodies under which communities become responsible for managing their resources within a certain area or projects

Conversions reports such as of National Communications Reports, National Adaptation Plan etc...

In adapting to the variable conditions of climate change, institutional development is critical. Likewise, the effect of increasing climatic instability and environmental degradation on food security is transmitted through institutions which shape the rules and rights of resource use. Various and often overlapping institutions operating on various scales are directly or indirectly exacerbating or alleviating the adverse effects of climate change. Therefore, it is critically important to better understand the role of institutions if adaptation is to help the most vulnerable social groups, as the current emphasis on poverty alleviation (Agrawal and Perrin, 2009).

While the adaptation process is predominantly local, its effectiveness depends on both local and extra-local institutions through which incentives for individual and collective action are structured. This is because "institutional arrangements structure risks and sensitivity to climate risks, facilitate or hinder individual and collective responses, and shape the outcomes of such responses". Hence, institutional assessment identifies the strengths and weaknesses of the institutional framework for addressing climate change governance challenges (Agrawal, 2008. World Bank ,2021).

## II. METHODOLOGY

### ➤ Study Area

Atbara River and New Halfa Municipalities' of Kassala State are semi - desert grassland within semi desert ecological zones in Eastern Sudan, total area amounts to about 31,500 hectares of which 38% represents a pure rangeland, the total population of River Atbara and New Halfa municipalities 'amounts to 136,911 constituting 7.6% and 211,864 people amounting to 11.8% of the total Kassala population respectively (Central Bureau of Statistics,2008).The inhabitants are mainly pastoralists tribes and small scale framers. The total number of permanent inhabitant's amounts to about 5,200 households distributed within thirteen villages(Sajak, 2013, Elgolzli, 2013). Azaza village of Atbara River is central largest village is situated at the left bank of Atbara River where A number of villages and fareques of pastoralists were established around during the drought periods. Traditional agriculture depends essentially on harvesting rain water through terraces and valley cultivation in addition to the New Halfa irrigated scheme on the Atbara River (Hamid etal,2013).

The herd is composed of small ruminants' camels and cattle of the structure75%, 15% and 10% respectively. Livestock production is characterized by being traditional and depending on rangelands and crop residues and is constrained by low quality feeds during the dry season (Mustafa,2015).

Main occupation of H/H heads of households is animal raising and cultivation other occupations include: wage labours, brokers.

Flood, storms, and droughts were the most climate related risks, that affect the livelihood of pastoralist in the area. Affected pastoral communities practiced local adaptive strategies, but the risks exceed their capacity to adapt on their own. Furthermore, some socio economic activities practiced by community members and pastoralists from outside the area have adversely affected the ecosystem and environment, such as overgrazing; tree cutting, traditional mining etc. (Mustafa *etal* ,2024).

There are no distinct formal institutions based in Atbara River Municipality, even government institutions they used to manage its affairs from New Halfa Municipality. Main informal institutions in Atbara River Municipality are agriculture and livestock association and Native Administration<sup>2</sup> (NA).

➤ *Methods and Tools of Data Collection*

Using of Climate vulnerability and capacity analysis (CVCA), (2009) based on CARE, community based adaptation framework, which presents range of “enabling factors include: Promotion of climate-resilient livelihoods ; Climate related risks reduction; Capacity development and Addressing Underlying Causes of Vulnerability), at level national polices existing local institutions .

Methods and tools are desk research check list for consultations, meetings, interviews and Venn diagram to visualize the interrelationship between institutions & questionnaire. Which were applied to state local formal institutions and informal ones as well.

➤ *Sampling and Sample Size*

Twenty-three (23) formal and informal institutions Table (1) which have been selected based on the scope of work and type of institution active in different disciplines of climate change adaptation and resilience. these included Technical Social Services Institutions, Environmental, working at State and local levels (Kassala State, New Halfa and Atbara River Municipalities). The type of institutions are: Government; Civil Society Organizations (CSOs), including National and International Non-Governmental Organizations (CSOs- {NOGs & INGOs}); ALPA; NA and CBOs. Most of institutions are based in New Halfa and mandated to both New Halfa and newly established River Atbara Municipality.

Table 1 Consulted Institutions Involved in Climate Resilient Livelihoods in the Area (n=23)

<b>Governmental</b>	<b>Level</b>	<b>CSOs (NOGs)</b>	<b>Level</b>
Range and Pasture Administration Ministry of Animal Resources	State	Gandool Network for Rural Development	State
Zakat Chamber- New Halfa *	Local	Pastoralists’ Environmental Society	State
Ministry of Agriculture, -New Halfa *	State	Sudanese Environmental Society(SECS)	State
Ministry of Social Affairs-New Halfa *	Local	Livestock association(ATbar a River)	Local
Meteorological Department	State	Farmer association ((New Halfa )*)	Local
Range and Pasture Dept. -New Halfa	Local	NA River Atbara (Alazaza village)	Local
Faculty of Agriculture Kassala University (New Halfa )*	Local	CSOs (INGOs) NGOs	Level
National Civil Defence Committee	Nation al	German Agro Action	State
Ministry of Social Affairs-New Halfa *	Local	Plan International Sudan (New Halfa	Local
Meteorological Department	State	Sudanese Red Crescent	State
New Halfa Weather Station -New Halfa	Local	Food & Agriculture Organization FAO	State
		Butana Integrated Rural Development Project (New Halfa )	Local
		German Agro Action	State

\*Mandated to both New Halfa and River Atbara Municipalities

<sup>2</sup> It is traditional system of governance operating with a certain social nature. It rested on a series of ordinances that transferred powers to tribal and rural communities. The system consists of three administrative tiers, with the upper most being the paramount Nazir in most cases

➤ *Data Analysis*

Data collected were coded, computerized and analysed using the Statistical Package for Social Sciences (SPSS) software version 10. Simple statistical measures were used to calculate averages, percentages and means for different parameters.

**III. RESULTS AND DISCUSSIONS**

➤ *Institutional Linkages and Effectiveness*

The study has revealed the Gov. institutions have well defined roles and mechanisms, they are directly and indirectly related to climate resilient actions, their mission is to provide weather and climate information; social and health services and development activities to ensure adaptations and sustainable development.

Institutional engagements are wide-ranging across the Gov.; informal institutions and NOGs at State or local levels figure 1: Venn diagram illustrated that, policies are part of the State level, which is in line with national policy. However, most of consulted Gov. institutions are based State (Kassala capital) whereas have offices at local levels mainly in New Halfa municipality, more or less working closely with pastoral communities at village level neglected the role of of River Atbara municipality.

The entire representatives' institutions mentioned that different plans and activities within their responsibilities, contributes to reduction of vulnerability of the pastoral groups these include and not limited to: enforcement of legislations rangelands and forest improvement and management; water source development; provision of climate information and services and capacity building.

Gov. institutions they are involved in most of CSOs adaptations related activities. In Kassala, they are concerned with local needs, but in some cases they lack the resources to implement locally adaptation and climate resilient actions. This is corresponded with Agrwal 2008 he cited that, an institutional linkages framework highlights the role of institutional partnerships in facilitating adaptation and drawing from social network analysis.

CSOs such as FAO Kassala Office and IFAD (Coordination Unit New Halfa) are in most cases not targeting mobile pastoralists and their communities. local Gov. institutions are better positioned than national institutions to have linkages with informal institutions such as NA leaders. Plan Sudan and IFAD have collaborative effort with local authorities and NGOs, they indirectly support adaptive capacity through rehabilitation of rangelands and subsistence cultivation., their limited scope of action as piloted demonstrations makes the perception of mobile pastoralists negative towards their interventions. These agree with Agrawal, (2008) who mentioned that, effectiveness of adaptation process is predominantly local, depends on both local and extra-local institutions.

Zakat Chamber and Ministry of Social Affairs they practice practical activities within their mandate framework, that support community livelihoods and promote climate resilient and generating social benefits at the local and community levels such as strengthen social protection system.

The Venn diagram illustrated that, the implementation at the local and community level is isolated this can be summaries that: Many institutions work directly with the target communities, while others are coordinated through the municipality departments, this resulted in lack of integrated planning and resources sharing; Absence of the INOGs at villages level has restricted management practices and therefore remains a significant gap between local, community-level entities and national level and River Atbara municipality, it practices their work from New Halfa municipality in collaboration with CSOs in partnership with others. This situation made the pastoral communities very marginalized and isolated. This situation coincides with Agrawal et al., 2009, that unclear mandates and conflicting priorities between levels and institutions of government lead had negative implications for the poorest and most vulnerable groups that are frequently the most adversely impacted by climate stresses.

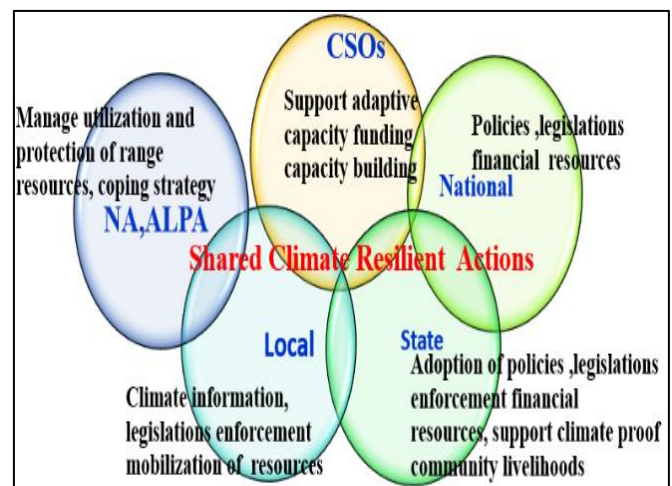


Fig 1 Venn Diagram Institutional Interlink for Climate Resilient Actions

The NA as informal institutions play a role in utilization and protection of range resources through manage the mobility time and direction of pastoralists between wet season (August–October) in East dry season in the North (November- August). According to pastoralists scout recognisance survey, traditional leaders given legal powers to prevent the transmission of diseases through precaution orders by prohibiting entering certain areas that were used by another herd even if that area has enough valuable pasture. Which support Agrawal and Perrin, (2009) they cited that, informal institutions can affect the climate adaptations.

NA shouldering role by-laws and informal rules of range management enforced and mediate access to the basic assets, such as rangelands, water, which obvious relevance to climate resilient action. Such institutions provide stable reference points for the social rules, while also framing the assortment of potential avenues for change or alternative adaptive means.

CBOs, which have recognized role in implementing adaptation and developmental program across the project area. Thus, CBOs have a significant role to play in the climate change adaptation within pastoral communities

During risks occurrence a local committees arise on the spot at temporal basis as emergency call for responses. These local committees work in collaboration with National Defence Council and NGOs (Sudanese Red Crescent, Plan Sudan and Community Volunteers). They develop communal and collective work. while state and local authorities formulate local plans and allocated budgets for emergency assistance, including support for defence, volunteer networks and communities to reduce risk throughout the vulnerable area. This highlights the importance of effective and appropriate actions in reducing vulnerability to hazard events, this ensured that, effective governance has a key role to play in shaping local capacity to and responses in the study area.

Conversely, poor governance and enforcement of by-laws and regulations and mismanagements are common within government institutions, this hindering the effectiveness of their roles.

➤ *Assessment of Enabling Factors Affecting Climate-Resilient Actions*

• *Promotion of Climate-Resilient Livelihoods*

Table (2) illustrate role of institutions and promotion of climate-resilient livelihoods through different mechanisms include: scaled-down climate projections ; Accessibility to information on current and future climate risks; Awareness of most vulnerable livelihood groups or economic sectors to climate and local plans or policies support climate resilient livelihoods.

Finding indicates that, only 22% of respondent institutions had scaled-down climate projections or weather forecasting. which is done by institutions considering climate risks in their plans, such as state meteorological authority and SECS and institutions that have Special Climate Unit. These findings indicate the importance of communication between these institutions information users at local level.

There are local plans and policies on the place more or less support climate resilient livelihoods as agreed by 83 % of institution at different levels, ie no specific directive climate change policy and measure on the place, this support ARC (2013) cited that, use of science-based evidence in developing climate related policies, strategies, and plans, was found to be very low. only 17% of respondent’s institutions they haven’t.

Accessibility to information on current and future climate risks was reported to be insignificant as well. It was stated to be adopted by only 28% of institutions through mandate of Special Climate Unit or coordination between institutions and online.

Table 2 Institutions and Promotion of Climate-Resilient Livelihoods

Promotion of climate-resilient livelihoods	Achievement		Agree%	Disagree %	Don't know	%
	Item	%				
Institution scaled-down climate projections	Considerations in the plans	6.0	22.0	88.0	0.0	100
	Special Climate Unit	56.0				
	Coordination with relevant institutions	28.0				
	Other	11				
	Total	100				
Accessibility to information on current and future climate risks	Special Climate Unit	32	28.0	72.0	0.0	100
	Coordination	32				
	Online	36				
	Total	100				
Aware about most vulnerable livelihood groups or economic sectors to climate	Pastoralists	36.0	100	0.0	0.0	100
	Agro- pastoralists	34.0				
	Farmers, pastoralists and agro- pastoralists	30.0				
	Total	100				
Local plans or policies support climate resilient livelihoods	Federal development plans	30	83.0	17.0	0.0	100
	State development plans	30				
	Eastern rehabilitation fund	23				
	Others (NGOs)	17.0				
	Total	100				

Source: Respondents Institutions (N=23)

Table 3 shows precisions of consulted institutions to climate related risks in the area, it indicates that, most climate related risk reported is implications of climate extremes (drought and floods), as agreed respondents' institutions (48%), followed by land degradation and soil erosion 20%. The situation was the same for the major non-climate related risks combinations of all mentioned aspects as reported by 34% of respondents. Most vulnerable group within the community exposed to climate related risks found to be pastoralists and agro-pastoralist. The group discussion in

Atbara River municipality expressed their suffering from risks of windstorms and wind erosions. Most vulnerable group within the community are pastoral groups.

Consultation findings revealed that, the most common natural risks in area are drought, land degradation and soil erosion while, non-climate risks include: poor governance; poor services and weak communications between the local institutions and NOGs and Gov.

Table 3 Precisions of consulted informal institutions to climate related risks in the area

<b>Climate Related Risks Reduction Indicators</b>	<b>Agree%</b>	<b>Disagree%</b>	<b>Total %</b>
Most climate related risks in the area			
Drought	16	84	<b>100</b>
Land degradation and soil erosion	20	80	<b>100</b>
Deterioration of quality of range plants and animal diseases	16	84	<b>100</b>
All aspects	48	52	<b>100</b>
Most important non -climate related risks that the areas faces			
Lack control over natural resources	17	83	<b>100</b>
Poor or lack of services	27	73	<b>100</b>
Poor governance	24	76	<b>100</b>
All factors	34	66	<b>100</b>

Source: Respondents Institutions

• *Climate Related -Risks Reduction*

Figure (1): shows percentages of accessibility of consulted institutions to climate risk information and plans as risks reduction indicators. The specific criteria including techniques, existence of effective EWS and capacity to respond.

Results indicates that, there were insignificant actions to access information on climate related risks reduction, however, due to nature of institution mandates and responsibilities only 32% of institutions, they access climate risk information through knowledge sharing ie exchange of information with the relevant authorities or via joint programs some time both exchange and joint programs. While 25 % of institutions were are not aware about the issue. The remaining 43% of institutions did not access climate risk information. There is more or less interaction between formal institutions such as agreements between government, NGOs which most important in facilitating adaptation as stated by consulted institutions. This supported Agrawal et al., 2009 citation that's responsive climate adaptation is constrained by weak technical and managerial capacity, poor linkages with other institutions at different levels, weak systems for gathering and disseminating information.

There is significant local policies and plans support to climate resilient livelihoods through different ways including national and state plans and partnerships CBOs and funded projects as local climate risk management plans, results show in significance results as 77% of institutions they have developed their annual plans, that may include adaptation measures. Only 33% develop temporary plans at emergencies, however, according to discussion there is variation in responses among institutions.

On the other hand, the consulted Gov. institutions are based at Kassala capital of the State whereas some have municipality offices at New Halfa they are more or less working closely with communities. Some of governmental technical institutions provide services at local level. These departments include: lime ministries, which mandated to River Atbara municipality as well.

Regarding functional EWS most of consulted institutions (70%) stated that, they have no proper EWS on the place, only 18% they have or have data sharing protocol, those represents INOGs who have had capacity to responses to climate related risks, they practice adaptation activities. About 12% of institutions are not aware about the EWS itself those mainly the traditional informal ones. Only 38% granted have capability to respond to climate related risks, while 55% of respondent's institutions disagreed that have no capacity to respond to climate related risks that and 7% they have no idea about climate risk responses and adaptation.

Institutions that have capability to respond and used to provide social and health services they declared that there's need for preventive adaptation measures to enable local communities to increase their social security hence resilience, also they're affirmed that, during the emergency there is gap in risks absorption mechanisms at community level such as savings, and credits to help pastoral communities to have access to funds to meet immediate needs, as they continued to earn income.

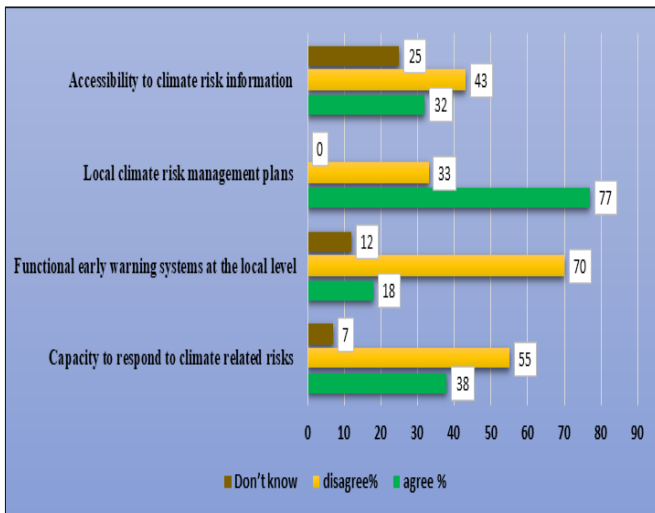


Fig 2 Percentages of Accessibility of Consulted Institutions to Climate Related Risk Information and Plans for Risks Reduction (n=23)

• *Capacity Development*

Figure 2: Shows percentages distribution of capacity development through monitoring and analysing information climate risks; dissemination mechanisms and resources allocated for implementation of adaptation related policies.

Findings indicates that, institutions capacities in monitor and analyse climate risks information was very limited as stated by 17% of respondent institutions, however, most of them are CBOs and weather stations. The monitoring was done through exchange of information, joint programs, about 61% institutions are disagreed, 22% they don't know. Dissemination mechanism adopted by 34 % of consulted institutions, they produce bulletins and/or involved in climate Media 42 % have no any mechanisms in place to disseminate climate risks information. while 24% they don't know

Discussions revealed that, the existing capacity and resource allocated implemented by meteorological stations in Kassala and New Halfa regarding River Atbara have no separate weather station it received information via New Halfa. This information is disseminated through the radio, and mass media outlets, especially during emergencies where vulnerable people use this information for their short term planning to evacuate in case of flood warning. So information has not been effectively distributed throughout the community due to weak communication tools. Poor communication makes pastoral communities suffering because they cannot access information at the right time; and institutions are not investing in the capacity and expertise needed to build long-term resilience. Therefore, transformative capacity development and participatory planning bring together local institutions with government entities; and other stakeholders to develop a better understanding of climate risks consequences and opportunities to resilient action.

There are very limited and rare of resources allocated for implementation of adaptation related policies as agreed by only 22% of institutions this accomplished through INGOs technical support or funded programs with counterparts with the Gov. entities, as concluded from consultations. However, 78% they are disagreed in allocations of resources in development planning.

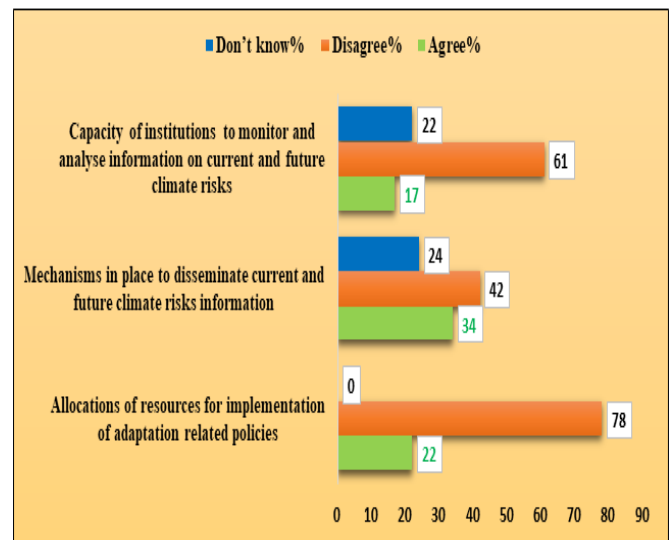


Fig 3 Percentages Distribution of Capacity Development Actions (n=23)

• *Addressing Underlying Causes of Vulnerability*

Figure3: shows, perceptions of consulted institutions towards underlying causes of vulnerability in the area, it indicates that the most significant factors constraining adaptive capacity are, low voice of pastoralists and local institutions in local planning processes were 60% of consulted institutions agreed on that including pastoralists association (River Atbara); farmer association (New Halfa) and NA River Atbara at Alazaza village, about 18% disagreed while 22% they don't know.

The institution also believed that, local policies and weak enforcement of by-laws and informal rules are other factor underlying causes of vulnerability (45%), while (55%) disagreed. Others suggested factors are: education, customs, lack of information and communication, however, these agreed by 62% and disagreed by 38% of respondents' institutions. in addition the legislations enforcement and policy adoption dimensions are crucial barriers and opportunities for pastoral communities in the area to build climate-resilient livelihoods.

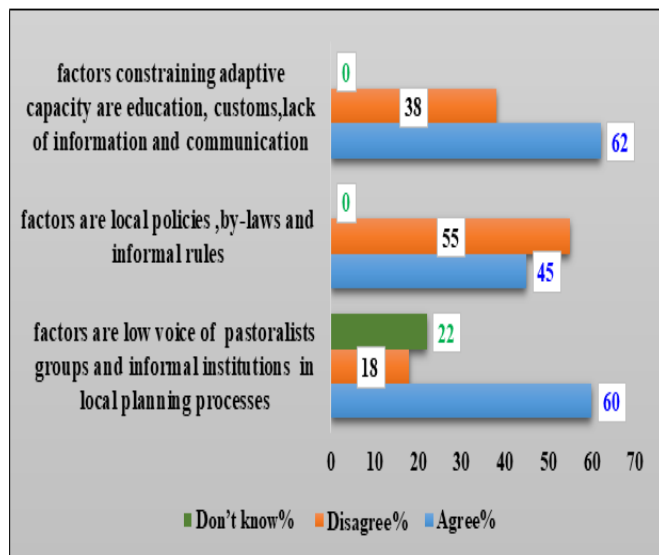


Fig 4 Percentages Distribution of Underlying Causes of Vulnerability

#### IV. CONCLUSION

The interaction between formal and informal institutions can be seen in the relation and coordination including roles and responsibilities among different actors. Mandates and measure of many Gov. institutions are directly and indirectly related to climate resilient actions, as their mission to provide weather and climate information; social and health services and development activities to ensure adaptations and sustainable development. These linkages and relations are most important in facilitating adaptation climate resilient actions, synergies and good governance which, can play an enabling environment for resilience activities. Informal institutions that, are working directly with the pastoral community at local level, their responsive facilitate accessibility to climate information, social service and governance land resources.

The government institutions that support climate resilient communities are based at state level whereas some have local offices climate resilient interventions that marginalized traditional local institutions (NA& ALPA) and made communities more vulnerable to the climate related risks. Supporting climate adaptation activities in the area are offered by various sectorial governmental institutions but implemented isolated and in an uncoordinated manner which limits their effectiveness. Enabling factors affected by low institutional capacities; absence of national climate policy and measures; weak regulatory framework to support adaptation options regarding pastoral sector and low levels of information availability and accessibility and dissemination. Early warning systems and climate information have an important role to play in promoting adaptation if people are able to use the information effectively. Climate data forecasting are not well distributed so as to allow improvement of the local forecasting capacities. Low voice of pastoralists and local institutions in local planning processes the legislations enforcement and policy adoption dimensions are crucial barriers and opportunities for pastoral communities in the area to build

climate-resilient livelihoods and considerate the conciliation between the community and and formal policy maker institutions.

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