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Livelihood Transformation among the Borana Pastoralists of Dhas District, Southern Ethiopia

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Abstract

This study intends to examine the triggers of livelihoods transformation among the Borana pastoralists of Dhas district in Borana zone, southern Ethiopia. The Participatory Rural Appraisal (PRA) tools, such as key informant interviews and focused group discussions, were used to explore the perceptions of local communities on the causes of livelihood transformation and its impact on the well-being of pastoralists and their overall survival. Purposive sampling was used to administer key informant interviews and FGDs. The findings of this study indicate that the foremost causes of livelihoods transformation in Dhas district include frequent drought and environmental degradation, pastoralists' sedentarisation policies and conflict over boundary and grazing lands. Previously, pastoralism livelihood system was the most viable strategy in the study area providing sustainable livestock products, while, at the same time, protecting water and rangeland resources and safeguarding environment warrant the Borana pastoralist's well-being. However, with the changing livelihood dynamics, the Borana's pastoral system underwent major upheavals, enfeebling the pragmatism of these practices. Therefore, this study concludes that a comprehensive development strategy for supporting pastoral livelihood becomes the need of the hour to guide the efforts of all relevant stakeholders operating in pastoral areas.

Keywords

Livelihood; Diversification; Drought; Borana pastoralists

1. Introduction

Livelihood diversification among pastoralists in eastern Africa has been common for the past 50 or more years, but has been especially prominent since the regional droughts of 1979-80 and 1984 (Little, 2016). All aspects of pastoral social and economic

life are ordered in relation to livestock and the environment in which they live (Mkutu, n.d.: 11). In pastoralist societies, livestock hold central value and are the basis of association in a complex of social, political and economic institutions. Pastoralist livelihood is practiced predominantly in toughest environments, where resources like grassland and water are erratically available (Alemayehu & Hizekeal, 2022), and usually cannot support other economic activities. In the words of Mkutu (n.d.: 11):

> "Some 500-600 million people live in the arid and semi-arid parts of the world, some 30-40 million of them depend entirely on animals. Of these 30-40 million people, 50-60 percent people are found in Africa. The Horn of Africa contains the largest grouping of pastoralists in the world: Sudan has the highest pastoralist percentage globally, while Somalia and Ethiopia rank third and fifth, respectively. In Djibouti, one third of the population is pastoralist. The semi-arid and arid areas in the Horn make up 70 percent of the total land area, which provides an average of 20 to 30 percent of GDP."

However, pastoralism as a livelihood system is under jeopardy. According to Watson (2006) and Little (2016), the main drivers and threats for pastoralist's livelihoods system were perennial drought, irrelevant resource management policies, frequent conflict, and disputes with neighboring ethnic communities over grazing rights.

Despite the fact that most pastoralists in east Africa still have their flocks and herds of livestock, others have lost all their animals during severe drought and have been unable to re-stock (Little, 2016). In addition, Little (2016) and Avis (2018) argue that conflict has encouraged the securitization of many border areas, alongside the commercialization and appropriation of pastoralists' land by certain vested interests, "resulting in the loss [and] fragmentation of rangelands induced sedentarisation of pastoralists, and a radical reduction in livestock numbers" (Galaty, 2013: 152). The outcome has been an increasing trend of diversification through experimentation with a range of non-pastoral livelihood options to adopt sedentary lifestyles (Avis, 2018; Watson, 2006).

The Borana pastoralists are forced into livelihood diversification due to severe drought and frequent conflicts, alienation of rainy season in ephemeral areas, and the environmental degradations that ensued owing to reduction in rangeland assets. Previously, research and development interventions have been proposed and implemented without adequate knowledge about the pastoralist's livelihood vulnerability to various drivers. The objectives of this study are to assess the causes of livelihood transformation, and to explore the vulnerability of pastoralists' livelihoods and contexts in which they currently function.

2. Methodology

2.1 The Study Area

The study was conducted in Dhas district of Borana zone, southern Ethiopia between November and December of 2021. Dhas district has 7 Pastoralist Associations[1] (PAs) namely: *Borbor, Tesso-kalo, Gayo, Mata-arba, Raro, Dhaas* and *Gorille* (Alemayehu & Doda, 2020). To be able to collect adequate information of the study area, three PAs were purposively selected for primary data collection i.e., Borbor, Dhaas and Gayo. In these three PAs, the Borana pastoralist's livelihoods have been transforming at an alarming rate as a significant number of pastoralists have evolved to diversify their livelihoods due to various push factors.

[1] Pastoralist Association is the smallest administration division beneath district.

Dhas district is semi-arid district located in eastern Borana zone. The vast majority of the district is unfit for agriculture and most of its population customarily practiced pastoralism. It's just recent that many households have begun to involve in small scale irrigation and other means of livelihoods. Dhas district share borders with Wachille, Miyo, Dire and Dubluk, Guchi district and Somali regional state of Ethiopia in the north, west, southwest, southeast and east, respectively (see Figure 1). Dhas district is the home to pastoral people rearing cattle, goats, sheep and camels. According to Dhas District Pastoralists Development Office (DDPDO, 2019 cited in Alemayehu & Doda, 2020: 112), land use description is revealed as follows: rangeland accounts for 47.3%, bush land 44.37% and bare land 8.33%.

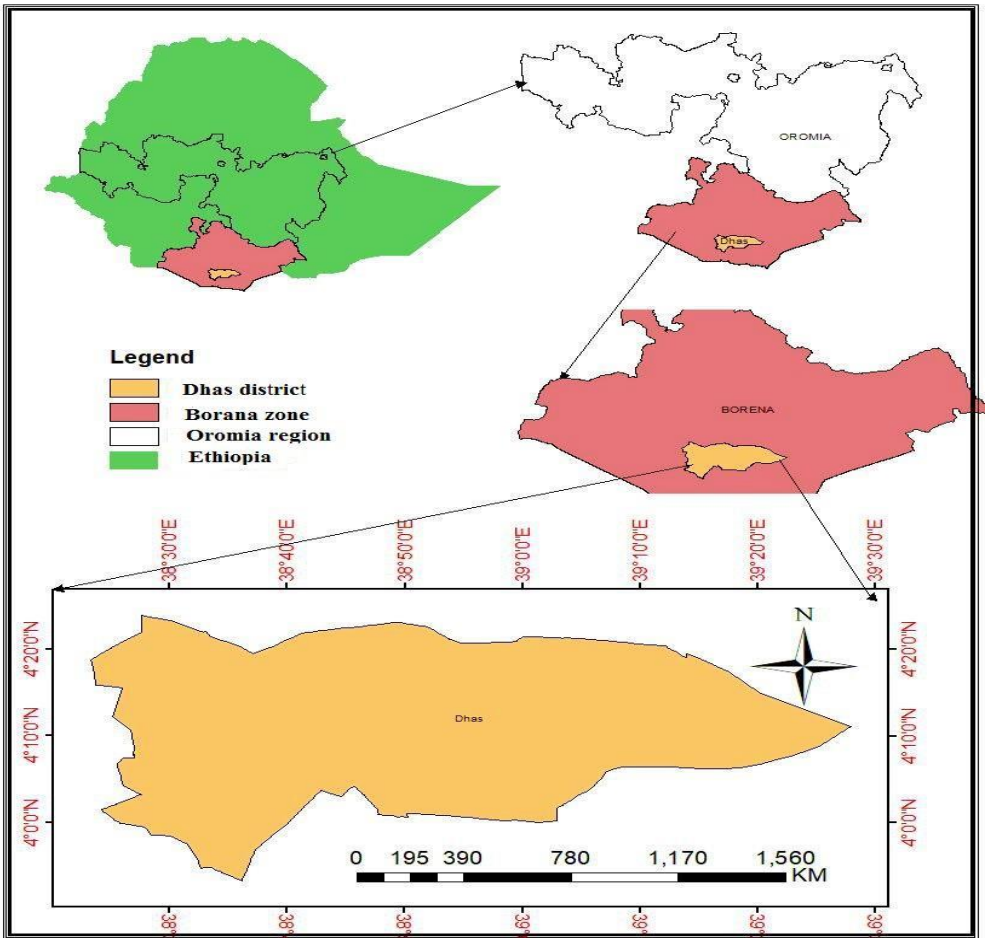

Figure 1: Map of study area [*Source:* Dhas District Disaster and Risk Prevention, 2021]

2.2 Data Collection

PRA was employed to gather the data. Tools like Key Informant Interviews (KII) and Focus Group Discussions (FGDs) were utilized to explore the perceptions of local communities on the causes of livelihood transformation and its impacts on the subsistence. The PRA tools comprised semi-structured questions that allowed open and flexible exchange of ideas between researcher and informants. Moreover, purposive sampling was used for administering KIIs and the FGDs. A total of 18 key informants were interviewed: three government officials (from administration and security office; Pastoralist and Irrigation Development Office and Disaster and Risk Prevention Office) and 15 from local communities (10 male and 5 female). Moreover, 3 FGDs, having 8 participants in each session, were conducted to attain group's views. Of three FGDs, 1 was conducted with women in Dhaas PA, while two FGDs were conducted with male participants, one in each of the remaining PAs.

2.3 Data Analysis

The data collected from KIIs and FGDs were categorized and interpreted in relation to the research objectives. The collected qualitative data was thematically analysed. Thematic analysis is a method of data analysis utilized for categorizing, investigating and reporting themes within the data to develop categories and sub-themes. These themes encompass the causes of livelihood transformation, the vulnerability of pastoralists' livelihoods and the contexts in which they currently function.

3. Results and Discussion

Results indicate that the following are the main drivers for the Borana pastoralist's livelihood transformation in Dhas district:

3.1 Frequent Drought and Environmental Degradation

The southern lowland of Ethiopia is characterized by recurrent droughts with high livestock mortality that often resulted in frightening the practicality of pastoral livelihood. In Dhas district of Borana zone, frequent drought and unceasing environmental degradation highly bothered the sustainability of Borana pastoralist's livelihood more than any drivers of livelihood transformations. Massive livestock death due to drought, particularly in the last 15 years, has badly affected the livelihoods of the communities and the overall food security in the Dhas district. Dhas district was one of the most affected areas in Ethiopia by the 2011 drought. According to FAO (2014), the total death rate was as much as 60%, 40%, and 25-30% for cattle, sheep and goats, respectively. Likewise, the recent droughts between 2021 and 2022 have provoked catastrophic impacts on the livelihoods of entire Borana communities.

Figure 2: Showing the skeleton of dead cattle in Borbor PA during the 2021-2022 droughts [*Source:* Dhas District Disaster and Risk Prevention Office, 2021]

According to Dhas District Pastoralist and Irrigation Development Office, "approximately 90% pastoralists in Dhas district lost their livestock possessions [the main sources of their subsistence] due to the delay in seasonal rainfalls for two consecutive years [four rainy seasons]. For that reason, the government distributed plot of lands around the traditional deep wells of Borbor, Gorille and Dhas PAs to destitute pastoralists and trained them to establish small scale irrigation at the

expenses of drought prone pastoralism to diversify their livelihoods. Accordingly, prolific results in Borbor and Dhas PAs have been witnessed and the communities started to sell their fruits and vegetable products they produced through irrigation in the proximate districts of Moyale and Wachille."

The Borana pastoralists were pretty skillful to deal with drought impacts as they were customarily capable to migrate to new productive grassland areas. However, in the past three decades, recurrent drought resulted in precarious environmental degradation and livestock fatalities owing to drought cycles condensation from 10-12 years to 3-4 years (Alemayehu & Doda, 2020; interview with key informants, 2021, Borbor).

Figure 3: Destitute pastoralists settled at *Dhati* camp in Raro PAs [*Source:* Dhas District Disaster and Risk Prevention Office, 2021]

Nori (2021) corroborated that changes in climatic patterns and environmental uncertainties have accelerated the lengthy droughts that hit the Borana lowland as from the 1970s. In addition to frequent drought and environmental degradation, the partial seizures of Mata-wayama rangeland unit in Dhas district by Garri Somali has deteriorated the customary natural resources management of Borana pastoralists to cope with the impacts of drought through cattle mobility, and, thus, confining them to very limited areas. Overall, environmental dilapidation has prompted significant transformations and reconfiguration in customary environmental management and livelihood patterns. Subsequently, livestock possessions have condensed and, thus, the survival necessities for a large percentage of the Borana pastoralists have diminished. Frequent drought and environmental degradation, predominantly with reference to the enduring reduction and loss of edible grass cover, was repeatedly signposted by informants as a major cause behind livelihood transformation in Dhas district. A key informant unveiled that:

> "The Borana pastoralists in Borbor town and surrounding PAs were progressively banked on charcoal selling as a perennial income generating activity, rather than merely during periods of drought torment, as they did in past. The persistent charcoal production was causative factors to the unceasing land degradation besides the drought and invasion of non-palatable bushes on the rangelands at the expense of edible grassland was also an indicator of land degradation with gradually impetus changes in livelihood pattern."

The Borana pastoralists opted to rely on already wrinkled environments that have been degraded over numerous years and facing increasing pressures from unstable weather patterns. They resort to deleterious coping strategies, such as the collection

and sale of fuel wood and charcoal that undermines long term sustainable livelihoods and natural resources. Overall, frequent drought and environmental degradation dynamics have considerably thwarted the livelihood system of Borana pastoralists. Hence, the climatic inconsistency in Borana Zone and Dhas district in particular has triggered immense challenges for pastoral livelihood system. These signposts that the Borana pastoralist's livelihoods are exceedingly knotted with water and rangeland resources and tenacity in climate change triggers obliteration of natural resources, severe stress on livelihood sectors and an income loss that affects the basic foundation of their pastoral livelihood.

3.2 Pastoralist Sedentarisation Policies

The tenure regime of the natural resources in Ethiopian lowlands experienced deep changes since the end of 19th century and were triggered by a number of factors (Helland, 2006: 29). In formal terms, the legal status of pastoral land is comparable to that of farmland, and the rights of Ethiopia's pastoralists are little different from those of its farmers (Peter et al., 2010). Even if the pastoralist livelihood systems do not correspond with the sedentary lifestyle; they have permanently found themselves at the sympathy of agrarian development policies.

In Dhas district, government-initiated pastoralist development policies have factually marginalized the communal land tenure customs that depict pastoral livelihoods system. To vitalize their sedentarisation strategies, government has implemented development projects that restrict livestock mobility and promote sedentarisation and mixed agro-pastoral system i.e., crop and livestock production as a replacement for pastoralism. According to key informants and FGD participants' elucidations, government rhetoric in the implementation of sedentarisation policy is diligently concomitant to the accessibility of basic infrastructures such as school, water, veterinary post and health station. However, the process by which this is being done is not complementary with pastoralist's means of survival. Abbink et al. (2014) stipulated that the permanent settlement of pastoralists is seen by government as the solution for the perceived problems of water and pasture scarcity in semi-arid areas ill-suited to rain-fed agriculture, despite the often adequate adaptation pattern of pastoralist's vis-à-vis their volatile environment.

In Dhas district, sedentarisation of Borana pastoralists has resulted in overexploitation of rangeland and water resources around the pre-urban settlements of Gayo, Dhaas and Borbor PAs. In the aforementioned pre-urban settlements, a number of basic infrastructures were built by the government and non-governmental organizations (at the request of government) to inspire sedentarisation programs. These changes are anticipated to further encourage the sedentarisation and to reduce significantly the number of livestock being raised by the Borana pastoralists (Degen, 2011). Alemayehu & Doda (2020: 117-118) noted that "the Borana pastoralists have a customary settlement rule (*dongora sera*) that restrict to encamp in dry and wet season grazing reserves. This customary practice is commonly used by the Borana pastoralists to save pasture for the dire time, to broaden grazing land scope, as well as to hinder inflowing of human settlement into the adjoining dry and rainy season grazing land areas."

However, contrary to the customary settlement rule of Borana pastoralists, human settlements and the expansion of basic infrastructures by government in formerly restricted grazing reserves have generated tragic trends for the sustainability of Borana pastoralists' livelihood system. These unfitting sedentarisation policies have restricted pastoral mobility between the wet and dry grazing lands and watering sites, which is the paramount response and adaptation strategy within the dry-land milieu. Hence, this study argues that the classical paradigm for pastoral development in Ethiopia based on sedentarisation is ineffective. A new paradigm based on mobility

of livestock, communal property management and all-embracing production systems are thus vital to sustain the pastoralists' livelihood.

3.3 Conflict over Boundary and Grazing Lands

Even though sporadic conflicts between the Borana and neighbouring pastoralist communities have been part of the history of inter-community relations in the past, the frequency and severity of inter-community conflicts has increased in recent years (Solomon, 2006; Odhiambo, 2012). The politics of ethnicity-based federalism has generated permanent and inflexible boundaries between different ethnic groups and has contributed to limiting the massive lands that pastoralists used to cross in search of pastures and water resources for their livestock. Abdulahi (2005) recounted that Borana and Garri resided in one administrative region in the pre-federal Ethiopia and lived in peace for many years; nevertheless they experienced sporadic conflicts over the access to resources. In their long-lasting relationship, they developed a common approach to shared resources, culture and governance systems (Abdulahi, 2005: 7). However, the introduction of such uncompromising restrictions has ascended perpetual tensions among various ethnic groups.. In addition, the regional state boundary demarcations established in 1991 has also augmented disputes between the Borana and Garri people. According to Temesgen (2010), the two rival communities are in discrepancy over the south eastern border of Oromia region (which is also the border of Borana lowlands and the adjacent Somali region).

As of 1991, conflict over boundary has exposed the mobility of Borana pastoralists' livestock to severe pressures. Consistently, Odhiambo (2012) and Pavanello & Levine (2011) reported that the implementation of ethnicity-based federalism has disrupted nomadic grazing movement patterns and restricted the Borana pastoralist coping strategies against adversity and drought, thereby, increased their exposure to shocks. Due to periodic conflicts in 2019-2020 between Borana and Garri Somali, rainy season grazing areas in Mata-arba and Rarro PAs and other vital rangeland transitory areas and water points were abandoned. This has exaggerated the scarcity of pasture and water as well as overgrazing in other PAs of Dhas district. In addition, numerous families have been displaced and exposed to starvation. Thus, the flow of displaced people and livestock have contributed to the obliteration of the hitherto insubstantial natural resources.

For centuries, pastoralists have ignored national borders and have engaged in activities, such as transhumance, related to their livelihoods being characterized by high levels of trans-border mobility. The rights of ethnic groups to self-administration, as enshrined in the 1994 Ethiopian Constitution, have provoked a contest towards control over land, as territorial gains at the PA, district as well as regional levels transform into more administrative power, land and potentially food relief. This means that pastoralist rangeland and water utilization system is no longer capable to respond to the environmental and climate variability triggering environmental degradation.

In sum, the conflict between the two groups has not only led to the death of many Borana and Garri, but it has also intimidated the livelihood security of the Borana pastoralists as multiple seasonal grazing areas such as *boji*, *dhaka-wata*, *cari-ilu*, *dida har-heddu*, *tuma*, *udet* and *kojiya*, have been acquired by the Garri (demarcated within Somali region).

4. Conclusion

In conclusion, push factors such as frequent drought, conflict, sedentarisation policies and environmental degradation were found to be the major threats to the sustainable practice of pastoralism in Dhas district. Paradoxically, there also existed a general consensus that pastoralism remains the most viable livelihood and production

system for the toughest environmental conditions. Yet, it is transforming and adapting to the severe drought and environmental stress resulting in declining pastoral practices. To conclude, we propose that there is a necessity for more deepened and sympathetic understanding of the drivers causing pastoralists' livelihood transformation in order to design supportive strategies that address their concerns.

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Author's Declarations and Essential Ethical Compliances

Author's Contributions (in accordance with ICMJE criteria for authorship)

Contribution	*Author 1*	*Author 2*	*Author 3*	*Author 4*
Conceived and designed the research or analysis	Yes	Yes	No	No
Collected the data	Yes	No	No	No
Contributed to data analysis & interpretation	Yes	Yes	Yes	Yes
Wrote the article/paper	Yes	No	No	No
Critical revision of the article/ paper	Yes	Yes	Yes	Yes
Editing of the article/paper	Yes	Yes	Yes	Yes
Supervision	No	Yes	No	No
Project Administration	Yes	Yes	No	No
Funding Acquisition	No	No	No	No
Overall Contribution Proportion (%)	40	30	20	10

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Research involving human bodies or organs or tissues (Helsinki Declaration)
The author(s) solemnly declare(s) that this research has not involved any human subject (body or organs) for experimentation. It was not a clinical research. The contexts of human population/participation were only indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or ethical obligation of Helsinki Declaration does not apply in cases of this study or written work.

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The author(s) solemnly declare(s) that this research has not involved any animal subject (body or organs) for experimentation. The research was not based on laboratory experiment involving any kind animal. Some contexts of animals are also indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or ethical obligation of ARRIVE does not apply in cases of this study or written work.

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(Optional) Research Involving Local Community Participants (Non-Indigenous)
The author(s) solemnly declare(s) that this research has involved local community participants or respondents belonging to non-Indigenous peoples. Yet, this study did not involve any child in any form directly or indirectly. The contexts of different humans, people, populations, men/women/children and ethnic people are also indirectly covered through literature review. Therefore, prior informed consent (PIC) of the respondents was taken under this study before the face-to-face interviews and interactions.

(Optional) PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)
The author(s) has/have NOT complied with PRISMA standards. It is not relevant in case of this study or written work.

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To see original copy of these declarations signed by Corresponding/First Author (on behalf of other co-authors too), please download associated zip folder [Ethical Declarations] from the published Abstract page accessible through and linked with the DOI: https://doi.org/10.33002/pp0102

SELF-DECLARATION FORM

Research on Indigenous Peoples and/or Traditional Knowledge

1. Conditions of the Research

1.1 Was or will the research (be) conducted on (an) Indigenous land, including reserve, settlement, and land governed under a self-government rule/agreement or?

Yes/~~No~~

1.2 Did/does any of the criteria for participation include membership in an Indigenous community, group of communities, or organization, including urban Indigenous populations?

Yes/~~No~~

1.3 Did/does the research seek inputs from participants (members of the Indigenous community) regarding a community's cultural heritage, artifacts, traditional knowledge, biocultural or biological resources or unique characteristics/practices?

Yes/~~ No~~

1.4 Did/will Aboriginal identity or membership in an Indigenous community used or be used as a variable for the purposes of analysis?

Yes/~~ No~~

2. Community Engagement

2.1 If you answered "Yes" to questions 1.1, 1.2, 1.3 or 1.4, have you initiated or do you intend to initiate an engagement process with the Indigenous collective, community or communities for this study?

Yes/~~ No~~

2.2 If you answered "Yes" to question 2.1, describe the process that you have followed or will follow with to community engagement. Include any documentation of consultations (*i.e., formal research agreement, letter of approval, PIC, email communications, etc*.) and the role or position of those consulted, including their names if appropriate:

- During the progression of this project I have consulted the Borana pastoralist's customary leaders to attain authorization and to select proficient informants that would abetted me to attain comprehensive data/ information from the target communities.

3. No Community Consultation or Engagement

If you answered "No" to question 2.1, briefly describe why community engagement will not be sought and how you can conduct a study that respects Aboriginal/ Indigenous communities and participants in the absence of community engagement.

Not Applicable

- ⇨ Name of Principal Researcher: **Dejene Alemayehu**
- ⇨ Affiliation of Principal Researcher: Institute of Indigenous Studies, Dilla University, Dilla Ethiopia

Signature: *DAlemayehu*

Declaration: Submitting this note by email to any journal published by The Grassroots Institute is your confirmation that the information declared above is correct and devoid of any manipulation.

INFORMATION AND CONSENT FORM FROM RESPONDENTS
(Non-Indigenous or Indigenous Respondents)
This form was translated into local language for the respondents

Title of the Research: Livelihood Transformation among the Borana Pastoralists of Dhas District, Southern Ethiopia

Principal Researcher: Dejene a Alemayehu
Dilla University, Dilla/Ethiopia
Research Supervisor: Yetebarek Hizekeal
Dilla University, Dilla/Ethiopia

A) INFORMATION TO PARTICIPANTS

1. Objectives of the research
The objectives of this study are to assess the causes of livelihood transformation, and to explore the vulnerability of pastoralists' livelihoods and contexts in which they currently function in Dhas district of Borana zone in southern Ethiopia

2. Participation in research
The researcher will ask you several pertinent questions. This interview will be recorded in written form and should last about 50-60 minutes. The location and timing of the interview will be determined by you, depending on your availability and convenience.

3. Risks and disadvantages
There is no particular risk involved in this project. You may, however, refuse to answer any question at any time or even terminate the interview.

4. Advantanges and benefits
You will receive intangible benefits even if you refuse to answer some questions or decide to terminate the interview. You will also contribute to a better understanding of the causes for Borana pastoralists' livelihood transformation.

5. Confidentiality
Personal information you give us will be kept confidential. No information identifying you in any way will be published. In addition, each participant in the research will be assigned a code and only the researcher will know your identity.

6. Right of withdrawal
Your participation in this project is entirely voluntary and you can at any time withdraw from the research on simple verbal notice and without having to justify your decision, without consequence to you. If you decide to opt out of the research, please contact the researcher at the telephone number or email listed below. At your request, all information concerning you can also be destroyed. However, after the outbreak of the publishing process, it is impossible to destroy the analyses and results on the data collected.

B) CONSENT

Declaration of the participant

- ⇨ I understand that I can take some time to think before agreeing or not to participate in the research.
- ⇨ I can ask the research team questions and ask for satisfactory answers.
- ⇨ I understand that by participating in this research project, I do not relinquish any of my rights, including my right to terminate the interview at any time.
- ⇨ I have read this information and consent form and agree to participate in the research project.
- ⇨ I agree that the interviews be recorded in written form by the researcher: Yes ( ) No ( )

Signature of the participant : _____ Date : _____

Surname : _____ First name : _____

Researcher engagement

I explained to the participant the conditions for participation in the research project. I answered to the best of my knowledge the questions asked and I made sure of the participant's understanding. I, along with the research team, agree to abide by what was agreed to in this information and consent form.

Signature of the researcher : DAlemayehu Date : 03-11-2022

Surname: Dejene First name: Alemayehu

- ⇨ Should you have any questions regarding this study, or to withdraw from the research, please contact Mr. Yetebarek Hizekeal or by e-mail at yetebarek-h.zekareas@connect.polyu.hk

- ⇨ If you have any concerns about your rights or about the responsibilities of researchers concerning your participation in this project, you can contact the Director of Institute of Indigenous Studies by email at petrostesfatsion@gmail.com