Adapting to melting glaciers

How Western Himalayan societies frame climate change and adaptation

Taha Anis

Independent project • 30 credits
Swedish University of Agricultural Sciences, SLU
Faculty of Natural Resources and Agricultural Sciences
Department of Urban and Rural Development
Environmental Communication and Management - Master's Programme
Uppsala 2022

Adapting to melting glaciers - How Western Himalayan societies frame climate change and adaptation

Taha Anis

Supervisor: Annette Löf, Swedish University of Agricultural Sciences, Department of Urban and Rural Development
Examiner: Stina Powell, Swedish University of Agricultural Sciences, Department of Urban and Rural Development

Credits: 30 credits
Level: Second cycle, A2E
Course title: Master thesis in Environmental science, A2E
Course code: EX0897
Programme/education: Environmental Communication and Management - Master's Programme
Course coordinating dept: Department of Aquatic Sciences and Assessment
Place of publication: Uppsala
Year of publication: 2022

Online publication: https://stud.epsilon.slu.se

Keywords: Adaptation, Identity, Risk and Information, Authority, Himalayas, Frame Analysis, Gilgit-Baltistan, Pakistan

Swedish University of Agricultural Sciences
Faculty of Natural Resources and Agricultural Sciences
Department of Urban and Rural Development
Division of Environmental Communication

Abstract

The glaciers of the Hindu-Kush Himalayas region flow into 10 major river basins and sustain nearly 2 billion people, with 250 million being directly dependent on them for freshwater sources while a further 1.65 billion rely on their outflows. These glaciers are now melting at a rate that has left more than a quarter of the world's population facing an existential crisis the likes of which they have never encountered before, with record heatwaves and fatal floods at the start of 2022 serving merely as macabre warnings of the devastation that is yet to come. Even radical changes in global activity that somehow limit warming to 1.5c will lead to more than a third of these glaciers to melt away by the end of this century, disrupting the lives of millions who stand in the frontlines to face the brunt of climate change through no fault of their own.

While nuclear powers Pakistan, India and China vie for control of this region due to its resources and geopolitical significance, there is negligible effort by any of these countries to save these glaciers or those living within these mountains — a third of whom already do not have enough resources to even afford necessary nutrition. To make matter worse, there are major gaps in our knowledge of these ranges that monopolise the world's largest mountains. This thesis is therefore an attempt to kickstart necessary adaptation research in the area, without which even the most well-intentioned adaptation measures can quickly turn into maladaptation.

This research conducts a frame analysis to shed light on the socio-political processes in the Western Himalayas that constitute climate change vulnerability and adaptation. In order to do this, 10 interviews were conducted in Pakistan's Gilgit-Baltistan region while a month was spent in the field observing participants and their understanding of identity, power, and knowledge in relation to climate change adaptation. The complex nature of identity, knowledge and power frames in the region highlight the complicated nature of the task at hand as well as the need for more research across the borders of India, Pakistan, China and Nepal, with cross-border adaptation collaborations being the need of the hour but an unlikely outcome among these national rivals.

Keywords: Adaptation, Identity, Risk and Information, Authority, Himalayas, Frame Analysis, Gilgit-Baltistan, Pakistan.

Table of contents

List of figures

Figure 1. Image of the path to Ghulkin. Source: Taha Anis

Abbreviations

GB	Gilgit-Baltistan
IPCC	Intergovernmental Panel on Climate Change
KKH	Karakoram Highway
SLU	Swedish University of Agricultural Sciences
SSI	Semi-Structured Interviews

1. Introduction and background

In this thesis, I explore how local communities in Western Himalayas make sense of global warming and melting glaciers and how this impacts their ability to adapt to climate catastrophes. In order to do this, I use frame theory to analyse different frames and how they connect to the adaptation capabilities of communities in Western Himalayas. This introduction is followed by the problem formulation before I specify the aims of this study and the research questions I set out to answer. I then look at the aspects of frame theory I will be employing before describing the methods used to collect and then analyse the data. I then expand on the results, connecting my findings on risk and information, identity and authority to adaptation, before going on to discuss them. I then conclude the paper with a summation of my findings as well as the potential uses of the findings of this research.

Pakistan has 7,253 known glaciers and more glacial ice than any other place on the planet besides the two poles (Craig 2016). These large reserves of glacial ice, some of the world's biggest reservoirs of freshwater, are fast becoming a looming threat rather than an advantage as global warming leads to drastic changes in their melting rates (Khan 2020). This puts the lives of millions living in the Himalayas at risk, many of whom may have to leave behind their livelihoods, culture and unique way of life and become climate refugees in order to save their lives if the current rate of melting continues for the next few decades (Borunda 2019).

The majority of the Hindu-Kush Himalayas and Karakoram in Pakistan is located in the autonomous territory called Gilgit-Baltistan (GB) that has a complicated political system where it is administered by Pakistan but has a separate parliament of its own. The region has historically been part of princely states (Snedden 2015) before it became a part of Pakistan in 1947 when the British left after the Indian Partition, with their main connection to the rest of the country being the shared religion of Islam (Kulkarni 2020; Shigri 2021). This is a simplistic overview of the political turmoil that took place at that time, the effects of which are still being felt till today, but a further expansion will not be possible in this study. Despite joining Pakistan, the region has very little historical or cultural overlap with the majority of the country. Local communities within the Himalayas mainly trace their lineages to China, Russia, Mongolia, Afghanistan, Nepal and Tibet than to precolonial India, which accounts for the ancestors of most of

Pakistan's and India's current population (Yeatts 1942; Hermann 1992). This has caused these local communities to not quite be fully accepted by the rest of Pakistan and vice versa, with GB yet to be granted the provincial status it has been demanding for years (Wasim 2022). However, the region remains vital to Pakistan due to its numerous tourist attractions, abundance of water sources and its richness in minerals and other resources (Ziauddin 2020; Yaqoob 2021). Additionally, the region borders Kashmir, Afghanistan, India and China and therefore has huge potential geopolitical significance even if access to most these borders is difficult, and in some instances nearly impossible, due to the unforgiving nature of the mountainous landscape (Sood 2016; Jamal 2021).

The harshness of this terrain and political apathy means that infrastructure is lacking in the region and so are the economic opportunities that come along with it. This lack of opportunity means that GB's economy relies almost exclusively on tourism and agriculture even though recent infrastructure campaigns for the China-Pakistan Economic Corridor have increased commercial activity. This reliance on tourism and agriculture means that the communities are even more susceptible to climate change as both these industries depend on stable weather, making climate change adaptation even more crucial (Gerlitz et al 2014).

2. Problem formulation

While global warming is a problem across the entire planet, mountainous regions continue to warm at a quicker rate than plains and flatlands (Nogues-Bravo et al 2007). The United Nation's Intergovernmental Panel on Climate Change (IPCC) states that "widespread mass losses from glaciers and reductions in snow cover over recent decades are projected to accelerate throughout the 21st century, reducing water availability, hydropower potential, and changing seasonality of flows in regions supplied by meltwater from major mountain ranges" (IPCC 2007, p57).

This acceleration in temperature has already been recorded in the subcontinent, with the region currently being gripped by record heatwaves that killed over 100 people in April in Pakistan and India combined (Irfan 2022). Temperatures in some cities reached as high as 49c in April 2022 — one of the highest temperatures ever recorded anywhere on the planet in the month — as Pakistan recorded its hottest April in 61 years while it was the hottest April in 122 years for India (Dunne 2022). This has led Pakistan's minister for climate Sherry Rehman to label this an "existential crisis" to the country and warned that thousands are at risk of being caught in flood bursts due to the "unprecedented rate" at which the glaciers are melting this year (Petersen and Baloch 2022).

For Pakistan and India, climate catastrophe "is already here and is unavoidable" as assistant professor and programme manager at the Gujarat Institute of Disaster Management Abhiyant Tiwari put it (Petersen and Baloch 2022), with a recent study claiming that these extreme heatwaves are now 100 times more likely in the Indian subcontinent (Carrington 2022).

Recent IPCC reports have also warned of the drastic impact these rising temperatures will continue to have on mountainous landscape and local communities living within these regions, especially in Asia. "Glaciers are likely to disappear by nearly 50% in High Mountain Asia and about 70% in Central and Western Asia by the end of the 21st century under the medium warming scenario. Glacier lake outburst flood will threaten the securities of the local and downstream communities in High Mountain Asia (high confidence)" (IPCC technical summary 2022, p29).

Compared to other mountain ranges across the world, research on the Karakoram and Hindu Kush Himalayas is scarce and there are major gaps in our understandings across various disciplines (Inman 2010; Gerlitz et al 2014; Nüsser 2021; Lee et al 2021). To add a further layer of complexity, the glaciers are melting at different rates within the different mountain ranges across Pakistan, with those in the Karakoram being relatively more stable as compared to those in the Himalayas

(Gerretsen 2019). The research that is being carried out is largely based on satellite images rather than on-the-ground research and data collection, which makes social sciences studies particularly scarce.

Most of the people living in these regions do not have access to the information that is taken for granted by the developed world. Internet is in its nascent stages in the region and has only become widely available in the past two years. Even then it is very limited, both in terms of availability as well as speed (Ali 2021). Additionally, a lack of resources and education mean that not everybody has the ability to access globally available information (Kohari 2020). This makes it difficult for them to access information regarding the impact of human activity and pollution, especially that emitting from the global west, on the environment of the region. Instead, their knowledge is mostly limited to the region itself and is largely shaped by how they interact with their surroundings.

Recent catastrophic events, including a glacial lake outburst flood on May 7 that swept away a bridge connecting Pakistan to China, showcase how even small natural disasters can have fatal consequences or bring life to a grinding halt in these regions (Patel 2022). With around a third of the people in Pakistan's Himalayas living in poverty (Gerlitz et al 2014), described here as "the inability to afford basic human needs such as nutrition" (Morduch 2006), most members of these communities have no safety net and even small disaster events can have catastrophic repercussions. Climate change adaptation is therefore inextricably linked with survival in the region.

3. Aim and research questions

The IPCC defines climate change adaptation as ‘‘adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities’’ (IPCC 2007, p869). I contend that this is a problematic definition since it directs focus on the ‘climate’ aspect of climate change and therefore only produces a simplistic and one-dimensional image. Instead, I base my understanding of adaptation on the work of Eriksen et al (2015), where they describe adaptation as a “socio-political process that mediates how individuals and collectives deal with multiple and concurrent environmental and social changes” (Ibid, p523). Therefore, similar to them, I “focus on authority, knowledges, and the way that individuals and groups are positioned in relation to adaptation” (Ibid, p524).

This understanding of adaptation is seconded by Ribot (2011), who states that traditional adaptation efforts should instead be called “vulnerability reduction”. “Orlove (2009:160–161) shows that, in practice, adaptation analysis tends to train attention on hazards rather than the broader set of stressors people face; it focuses, via cost-benefit analysis, on easily measured variables such as economic well-being rather than less-quantifiable cultural and religious values, long time horizons, or attachment to place; and by attending to adjustment, “it tends to exclude the possibility of non-adaptation from consideration.”” (Ibid, p1).

I understand that this is a departure from traditional understandings of climate change adaptation since, as Marino and Ribot (2012) point out, “social scientists have, to date, been hesitant to frame climate change as a discursive construction likely because of the political pressure to address a ‘tangible’ climate change that favours bio-physicality over social construction” (Ibid, p325). However, as stated by several constructionist scholars (Marino and Ribot 2012; Westin 2019), looking at the constructionism of a phenomenon does not negate its bio-physical characteristics and as such does not make it any less real.

Since I take a constructionist and interpretative standpoint, I look at localised understandings of adaptation and contend that traditional adaptation efforts which look only to soften the blow of climate change are potentially useless and even detrimental without analysing localised understanding of adaptation. This is seconded by Marino and Ribot (2012), who state that “climate mitigation and adaptation interventions are necessary and inevitable; but without understanding their effects, we can inadvertently reproduce or deepen the damages they intend to redress (Barnett and O’Neill, 2010)” (Ibid, p323). This is particularly true for adaptation processes in impoverished areas. “Because the “adaptation” side of climate action aims to reduce human vulnerability, it cannot be limited to treating incremental effects from climate change so as to maintain or bring people back to

their pre-change deprived state" (Ribot 2010, p50). With a third of GB's population unable to afford basic human needs, it is vital that adaptation is understood in this context.

Therefore, I follow Eriksen et al's (2015) recommendation of "applying concepts of subjectivity, knowledges and authority to the analysis of adaptation" (Ibid, p1) to analyse the socio-political aspects of adaptation. As I am conducting a frame analysis, that means looking at identity, risk and information and authority frames in the context of adaptation within Western Himalayan societies. Since frames allow the analysis of not only how actors make sense of a situation but also what actions they prescribe to improve or address the situation (Entman 1993; Snow and Benford 2000; Van Hulst and Yannow 2016), I shed light on how communities in Western Himalayas make sense of climate change adaptation through the socio-political processes of identity, information, and authority as well as on what kind of subsequent adaptation actions they prescribe through them.
I will therefore be answering the following research questions in this paper:

1. How do local communities in the Himalayas make sense of climate change and melting glaciers through the lens of identity frames, risk and information frames, and authority frames?
2. What kind of diagnosis and subsequent prognosis emerge from these frames?
3. How do these frames tie into the local communities' ability to adapt to climate change?

4. Theory

4.1 Social constructionism and interpretivism

This paper takes a social constructivist view, which states that both reality and knowledge are socially constructed (Berger and Luckmann 1966; Kim 2001). As Westin (2019) points out, "this entails a recognition of the existence of multiple, socially constructed realities instead of a single reality" (Ibid, p46). Therefore, it becomes important to take an interpretive research design where the focus is "on specific, situated meanings and meaning-making practices of actors in a given context," (Schwartz-Shea and Yanow 2013, p1) and hence "privileges local, situated knowledge and situated knowers" (Ibid, p5-6). By doing so, I am able to look at reality and knowledge in a circular manner where understanding shapes context and context shapes understanding. Hence, I shed light not only on how local communities in Western Himalayas create knowledge regarding the reality of climate change but also how this knowledge impacts their ability to adapt to this reality in the future. This is particularly important since adaptation measures taken without understanding local knowledge and with a one-dimensional approach to adaptation can result in maladaptation where changes can do more harm than good (Barnett and O'Neil 2010).

Since constructionism "emphasizes the interactive process in which social reality is constructed" (Van Gorp 2007, p70), frame theory is a useful tool as it helps analyse the interactions that create reality (Van Gorp 2007; Westin 2019). This is because "framing theorists have consistently postulated a relationship between the microcosmic elements in a given message and a macrocosmic worldview of the communicator" (Maher 2001, p86).

4.2 Adaptation research

Preston et al (2015) state that when conducting adaptation research, researchers must determine between research *about* adaptation and research *for* adaptation. This paper conducts research *about* adaptation, "which emphasizes fundamental understanding of adaptation processes in human and natural systems, without necessarily seeking to inform or facilitate a particular adaptation response" (Ibid, p127). This is therefore a paper with the purpose of "directing effort toward the development of fundamental knowledge and academic indicators of merit" (Ibid, p127). They also touch upon what they refer to as "the "corporatization' of academia", especially in adaptation research. "While funding bodies for scientific research have often sought national or international benefits from their investments,

there is increasing demand for a clear line of sight between research investment and evidence of its economic, societal or environmental returns. This has translated into a greater emphasis on problem-oriented, rather than curiosity-driven, research" (Preston et al 2015, p128).

Eriksen et al (2015) claim that research focusing only on the climate "masks the social-political causes of risk and vulnerability (Ribot 2011), as well as the socio-environmental processes (Nightingale 2015) that mediate responses to climate change and that have been central to how humans have always responded to environmental variability" (Ibid, p524).

Meanwhile, Vink et al (2013) highlight the complications surrounding climate change adaptation and by extension climate change adaptation research. "Some have referred to climate change adaptation as a "wicked problem par excellence" (Rittel and Webber 1973, Lazarus 2008, Davoudi et al. 2009, Jordan et al. 2010), which cannot be precisely formulated or solved, because of widely diverging problem formulations and vested interests" (Ibid, p1).

Therefore, it is important to look at adaptation not as one neat process as it sometimes is when researchers aim to come up with definitive and measurable metrics but rather as the amalgamation of multiple socio-political systems. What this amalgamation entails varies from scholar to scholar and I base my work on what can be described as Eriksen et al's (2015) triangle:

Figure 2. The socio-political processes that constitute adaptation. Source: Eriksen et al (2015)

4.3 Frame analysis

Frame analysis was first developed by Erving Goffman in 1974 and has since been used in a plethora of disciplines, ranging from social movement analysis (Benford and Snow 2000; Gamson 1988; Morris and Mueller 1992) and

psychology (Kuhnberger 1998; Levin, Schneider, and Gaeth 1998) to international relations (Drake and Donohue 1996; Mintz and Redd 2003) and communication theory (De Vreese 2012; Entman 1993; Scheufele 1999).

Frame theory has become a popular method for analysing qualitative data, especially thematic and linguistic data, looking at how different aspects of a social phenomenon are highlighted, or framed, and therefore how the world is understood through them. “Frames…guide the ways situational participants perceive their social realities and (re)present these to themselves and to others” (Van Hulst and Yannow 2016, p94). Snow and Benford (1992), meanwhile, define frames as an "interpretive scheme that simplifies and condenses the 'world out there'" (Ibid, p137). Frame analysis therefore focuses on how an individual’s language, culture and ideology interact with social situations and hence create “particular ideative patterns through which the world is understood” (Lindekilde 2014, p1).

Entman (1993) states that frames make certain items more ‘salient’ by prioritising specific pieces of information over others. What is meant by making something more salient is that the communicator makes that information more noticeable, meaningful and memorable. This allows some narratives to become powerful and more relevant than others by increasing the probability that the receivers will perceive, interact with, discern meaning from and process the information from them in a certain manner.

Van Hulst and Yannow (2016) say frames produce ‘a model for subsequent action’, adding that how a problem is framed and what actions are taken for it “work simultaneously and interactively, and at the level of tacit, not conscious, knowledge” (Ibid, P98). Rein and Schön (1977) also discuss the interconnected nature of frames and the actions they prescribe by saying that frames allow actors to not only understand how a situation is but also envision how it ought to be and therefore suggest steps to get to that desired scenario, while Entman (1993) says frames define problems, diagnose causes, make moral judgments and suggest remedies. This exploration of the problem formulation and what Mockel (2019) in her Master’s thesis refers to as action biases created via those problem formulations is particularly relevant to this paper from my social constructionist standpoint as it helps explore how certain frames help or hinder local communities adapt to climate change.

Entman (1993) points out that frames can be both intentionally and unintentionally created via communication. “Communicators make conscious or unconscious framing judgments in deciding what to say, guided by frames (often called schemata) that organize their belief systems” (Ibid, p52). In fact, he points out that it is possible that the frames which influence the receiver’s thinking may not necessarily reflect “the framing intention of the

communicator". This is seconded by Goodwin and Jasper (1999), who state that culture shapes the framing process "typically in ways unrecognized by the actors themselves" (Ibid, p48). As Westin (2019) points out, from a social constructionist perspective, meaning is created between the noses through communication and social interaction rather than between the ears through individual thought and reflection. Hence unintentional and unconscious frames are the main subject of my study rather than strategic frames that are deliberately created by either the media or those in power.

In later years, frame analysis has been developed to not only look at the frames themselves but also at the framing process through which they are created. While frames are socially constructed and therefore shift with time, they are relatively stable and are both difficult and slow to change (Goffman 1974). In contrast, framing looks at the more dynamic process through which these frames are created either strategically or otherwise. An analysis on framing however requires looking at the creation and evolution of frames across time, which was not possible to do so within 30 days of fieldwork due to the limited timeframe of a master's thesis. Due to this, the only focus of this study is on existing frames rather than on their creation and evolution.

5. Methods

In this section I discuss my methods to first gather and then analyse qualitative data for this study.

5.1 Data gathering

In order to gather data for this paper, I spent 30 days doing fieldwork in Pakistan's Himalayas, where I conducted 10 recorded interviews while interacting with and observing participants and other members of the community. While document analysis is a popular and convenient choice of data gathering and analysis, the two main reasons why I instead opted for interviews and participant observations were the dearth of relevant papers as well as the problematic nature of research articles emanating from the region, with Pakistan being in hot water recently after hundreds of papers were retracted by different journals due to plagiarism and other issues.

My 30 days in the Himalayas were divided between two villages in the Hunza district — Ghulkin and Minapin — along with time spent in the small town of Nomal in the Gilgit district. While the two villages of Ghulkin and Minapin are not too far away from each other, there is a big discrepancy in the resources and education available to their residents. The Aga Khan Foundation has helped provide quality education to the people of Ghulkin, who have a higher degree of education and more access to internet and other resources that help them connect with the rest of the world as compared to Minapin. The reason for choosing these two villages specifically was their proximity to certain fast-melting glaciers and to see if there is any contrast in the sense-making processes of two villages that are geographically close together but are divided by resources and education. Nomal, meanwhile, is a small town that hosts people from various backgrounds and villages. Its relatively warmer weather means that there are two crop yields there and is therefore a place where many people come to from seasonal villages. Due to that, it is a melting pot of different sub-cultures within the region and therefore has several contrasting frames existing within it. The following figure shows the three locations on a map:

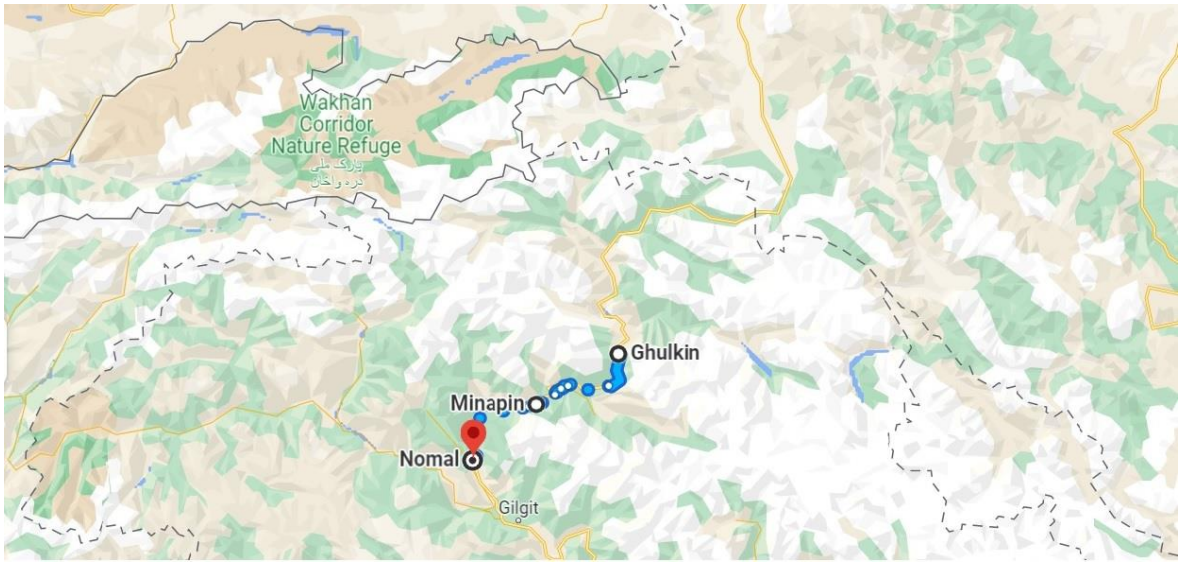

Figure 3. Google map screenshot showing Ghulkin, Minapin and Nomal

In order to get as broad a cross-section of Himalayan society as possible, I tried to interview people from different classes, ages and genders but the conversative nature of society meant that I was unable to interview a lot of women or observe them in the manner that I would have liked. Therefore, I made special effort and went out of my way to ensure that I interviewed at least three women in order to get some input from them while I adopted a more snowball sampling approach to male interviewees. Adams (2015) states this is not an uncommon approach. “If the group is a large one, researchers ordinarily choose to interview a manageable random sample or a stratified random sample” (Ibid, p495). Brief descriptions of the 10 interviewees can be found in appendix 2.

I kept a journal with me to record my observations during my time in the field and tried to make daily entries into it. However, that was not always possible either because there were not enough new observations to add or because of logistical reasons such as me not always having access to my journal while travelling or hiking. On other days I was able to make multiple entries into it and tried to record information as soon as I had made an observation.

I conducted semi-structured interviews (SSIs) based on the works of Adams (2015) and McIntosh and Morse (2015). This was because structured interviews do not provide much room for the interviewees to express their feelings and hence quickly become monotonous while gathered data feels closer to a survey than the back-and-forth of an interview. Additionally, data gathered from such close-ended questions would not be in line with my interpretivist approach. “When performing as a discovery-oriented research instrument, qualitative researchers tend to construct study-specific sets of questions that are open-ended in nature so the

investigators provide openings through which interviewees can contribute their insiders' perspectives with little or no limitations imposed by more closed-ended questions" (Chenail 2011, p255). On the other hand, unstructured interviews can have a lot of variances in data and therefore make it difficult and time-consuming to sift out relevant information (Bihu 2020), especially when participants usually feel their voices are not heard enough and are over-eager to share their views and opinions as was mostly the case during my research.

Adams (2015), discussing the advantage of semi-structured interviews, state that they "are superbly suited for a number of valuable tasks, particularly when more than a few of the open-ended questions require follow-up queries" (Ibid, p493), which was exactly the case for this research. Since the aim of these interviews was to "obtain subjective responses to objective knowledge" (McIntosh and Morse 2015, p3), my SSIs were what they categorise as the descriptive/confirmative type.

I used an interview guide that was based roughly on the research questions that I was hoping to answer through this paper but had to shelve it sometimes in favour of a more open and fluent discussion that allowed the participant to shape the flow of the conversation. I tried to stick to the same question format and arrangement but that was naturally not always possible since follow-up questions took precedence for a smoother conversation flow and sometimes the respondents had already discussed a certain topic so forcing them to go back to it seemed counter-intuitive in those moments. This was in line with Adams' (2015) statement that the "agenda for a semi-structured interview is never carved in stone" (Ibid, p498). Since I take an interpretivist approach, prioritising the flow of the interview over the agenda was vital to give the respondents all the space possible to say what they wanted to say of their own accord. While it is not possible to remove the influence of the interviewer completely, I believe I managed to minimise it as much as possible while also ensuring the conversation remained within the prescribed topical limits.

Before every interview, I explained the nature of my research and what I was aiming to get out of it. Some people were hesitant about discussing climate change and melting glaciers as they felt that they weren't knowledgeable enough about the subject and suggested that I should instead talk to experts. I had to then explain to them that I was not looking for facts but instead for how they make sense of climate change and how it impacts adaptation in the region. I was a bit uncomfortable in trying to convince them to overcome their initial hesitancy and take part in the interviews but recognised that this was necessary in order to put them at ease. Since their main concern was with their status as laymen — which had to do with them misunderstanding the nature of my research rather than with them having any problem with being a part of it — I believe my clarifying statements were within ethical bounds and did not involve any form of coercion or unnecessary persuasion. If someone still responded that I should talk to an expert instead, I took that as a

sign that they did not want to be interviewed and looked for other interviewees instead.

Before every recorded interview, I had the participants read and sign a consent form that explained in detail the nature and purpose of my study and allowed them to choose how they would like to participate in it. This consent form has been attached in the appendix. However, since only a few of my interviewees were literate and even fewer spoke English, I orally translated and explained the contents of the consent form to them in Urdu and recorded their oral responses both in audio and in writing together with the participants. Retrieving consent from participants who are not literate and speak a different language is particularly sensitive and requires addition reflection on reflexivity. I therefore ensured that the three principles of informed consent process, as described by Kuthning and Hundt (2013), of adequate information being provided, participants comprehending the information and consent given voluntarily were all observed even if written consent could not be provided. Additionally, the privacy, confidentiality and anonymity as described by Boschma et al (2003) of all respondents was prioritised.

5.2 The coding process

I transcribed the interviews while simultaneously translating them line-by-line into word documents. Li (2011) states that when translating the narratives of interviewees, the dimensions of temporality, sociality and place should be kept in mind. Hence I tried to remain as faithful as I could to what I felt was the original sense of the interviewee in keeping with the temporality (the past, present and potential future of climate change and the people of GB), sociality (the personal conditions of the respondents, the collective situation of society in GB and the respondent's relationship with me), and place (the physical geography and topography of GB) dimensions.

Birbili (2000) says that some of main considerations to look at when considering the quality of a translation are "the autobiography of the researcher-translator; the researcher's knowledge of the language and the culture of the people under study (Vulliamy, 1990:166); and the researcher's fluency in the language of the write-up". I have spent nearly seven years in journalism where I often conducted interviews in Urdu before writing the articles in English but this is the first time I transcribed interviews for a research paper rather than merely using the information for news articles. I would state myself equally comfortable with both Urdu (my first language) and English (the language in which all of my studies and work have been conducted).

The problems of gaining conceptual equivalence and capturing the same meaning remain but Phillips (1960) says this is "in absolute terms an unsolvable

problem" since "almost any utterance in any language carries with it a set of assumptions, feelings, and values that the speaker may or may not be aware of but that the field worker, as an outsider, usually is not" (Ibid, p291). Other unavoidable problems such as inability to convey the exact grammatical syntax remain. I have chosen to use double quotation marks when quoting respondents below as they are taken verbatim from the transcripts even if they may not be literal word-for-word translations. I have added modifications within square brackets for clarification purposes in some quotes within this paper where context was required.

After translating and transcribing the interviews, I conducted a line-by-line analysis of the generated data and looked for power frames, identity frames and risk and information frames. Relevant data was first colour-coded and later moved to a separate document to make access and comparison easier. When conducting the qualitative content analysis, McIntosh and Morse (2015) recommend that "the researcher works by item, first reading all participants' responses to the same question," (Ibid, p9) and "then uses standard coding procedure, highlighting important words or phrases, and making notes in the margin that emphasize important features in each response." (Ibid, p9) However, as explained in the previous section, my interview structure was more fluid than suggested by McIntosh and Morse and hence I felt that coding the data interviewee by interviewee was more efficient than the itemised coding method suggested by them.

The codes were determined via definitions that were derived from the works of previous scholars (Kaufman et al 2013; Eriksen et al 2015; Van Hulst and Yannow 2016; Hensle 2018; Woroniecki et al 2019). These initial frames were then sub-categorised into diagnostic (how the problem is viewed) and prognostic (how the problem needs to be solved) categories, based on the works of Van Hulst and Yannow (2016) and Benford and Snow (2000).

Identity frames were defined according to the works of Van Hulst and Yannow (2016) and Hensle (2018), with the main emphasis being on the description of oneself within a certain context, especially in terms of gender and GB citizenship since I looked for aspects of social identity and place identity. Risk and information frames were guided by Kaufman et al (2013) and Eriksen et al (2015), with focus on the "assessments about the level and extent of a particular risk" (Kaufman et al 2013, p2), which in this case was global warming in general and melting glaciers in particular. Additionally, risk and information frames indicate which information sources can be considered trustworthy, so the focus was also on how respondents describe the reliability of different sources. Authority frames were based on the description of Kaufman et al (2013) and the work of Woroniecki et al (2019), and were defined by how respondents discussed individuals and entities in power as they "help the disputant determine not only which forms of power are legitimate (e.g., governmental, legal, civil disobedience) but also the forms of power that are

likely to advance one's own position (e.g., authority, resources, expertise, coalition-building, threat, voice)" (Kaufman et al, p2), and how respondents discussed leadership, influence over political decision-making, coping capacity and the ability to influence livelihoods. A codebook, based on the works on Hensle (2019), detailing this process can be found in appendix 1.

6. Results

In this section I will be presenting my findings and answer the first two research questions while also touching upon RQ3. Several scholars (Trumbo 1996; Dewolf 2013; Jones and Song 2014; Jang and Hart 2015) have used frame theory to analyse climate change adaptation frames. However, as previously mentioned, I see adaptation as a multifaceted process, similar to Marino and Ribot (2012) and Eriksen et al (2015). Therefore I look at identity frames, authority frames and risk and information frames in the Western Himalayas and how these frames impact the adaptation capabilities of communities in Western Himalayas.

6.1 Identity frame

Alongside Eriksen et al (2015), several other scholars have also discussed the importance of understanding identity in relation to climate change, especially climate change adaptation. Schön and Rein (1994) point to the importance of identity frames when they claim that shared interests can help create solutions to intractable policy issues. This can also be applied to solutions to adaptation. Baxter and Armitage (2012) stress upon the need of "understanding how people understand environmental change, and how they select adaptation strategies based on a cognitive process influenced by place identity" (Ibid, p257). Similarly, Barnet et al (2021) place emphasis on social identity, claiming that "adaptation to climate change is inescapably influenced by processes of social identity," (Ibid, p1) and stating that "emerging research suggests that social identity … can also affect climate change adaptation (Frank et al 2011, Fresque-Baxter and Armitage 2012, Quinn et al 2015, Wernersson 2018, Ruoso 2019)" (Ibid, p1).

Diagnostic

Respondents often expressed feeling alienated within their own country and brought up the decision of their former leaders to join Pakistan in 1947 when discussing their own identity, with many wondering whether they would have been better off forming a separate nation instead. Interviewee 7 expressed how the sense of alienation felt by people of GB is exasperated by the "choices of their ancestors":

> "We chose to be a part of Pakistan. You guys didn't have a choice, you were told by the British that you are now part of Pakistan. We had a choice, and we opted to join Pakistan, yet we continue to be ignored and side-lined."

The reference to people from other parts of Pakistan as "you guys" here highlights how local communities frame their identities as different from the rest of Pakistan.

This sentiment of framing their identity as separate from those of other parts of Pakistan was also echoed by interviewee 9:

> "When someone comes from somewhere else, I like to say to them that "oh you have come to visit from Pakistan"."

By referring to domestic tourists as visitors from Pakistan, similar to how one would refer to foreign tourists as visitors from Sweden, for example, the interviewee was showing that he doesn't think of GB as part of Pakistan. By extension, he thinks of himself as Gilgiti rather than as Pakistani.

Another aspect commonly brought up when discussing identity was the tight-knit nature of Western Himalayan societies and the pride people take in how they band together during adversity, with interviewee 3 stating:

> "We may have our own problems but when things go bad then we come together and work out a solution. Then nobody cares about which tribe you are from or what your religion is or what your sect is, everyone is equal then."

This reference to residents of GB as a collective 'we' and referring to problems as "our problems" was a common feature and highlighted how strongly they frame their identity as being separate from those of the rest of the country.

Interviewee 1, who traces his lineage to Central Asia, said that they are "neither in the house nor where the washerman washes his clothes" when discussing how people in GB feel that unaccepted by both Pakistan and China. This is a common proverb in the subcontinent, used when referring to a situation where someone is caught between two things without being able to commit to either one, with the closest English proverb being having one's feet in two boats. This again shows that local communities frame their identities as being separate from those of other parts of Pakistan.

Identity frames do not exist in a social vacuum and are created and reinforced via social interactions, and I received special treatment due to the hospitability of members of these communities, who often referred to me as a guest. This further reinforces that people from other parts of the country are looked upon as being separate from the members of the local communities.

Secondly, women's identity was often referred to in connection with the collective rather than as individuals, with female respondents also referring to themselves in relation to others. Interviewee 10, while discussing why their unique landscape is so important to her, said the following:

> "As a daughter, a wife, and a mother I have a very strong connection to this place. We can't leave it because we have everything tied to these lands. All our families are here."

Interviewee 3 said something similar when discussing what she thinks will happen in the case of a climate catastrophe:

> "If something goes wrong then we expect our brothers and fathers to take care of us. Women are not treated unfairly here. We aren't taken advantage of or harassed when we are in need. Everyone treats us like we are their own sisters."

Similarly, men believe that women are equal because they are given first priority, with interviewee 4 stating:

> "We always take care of our women. Whenever there is a catastrophic disaster like the Attabad Lake incident or the floods [of 2010], women were the first ones to be taken care of."

However, by giving salience to the fact that women are "the first ones to be taken care of", attention is drawn away from the fact that men are exclusively in the position to be making such decisions.

Almost all respondents were also eager to state that women are not treated like they are in other parts of the country, once again being quick to differentiate and draw a line between the people of GB and citizens in other parts of the country.

While it is important to address such frames, Van Hulst and Yannow (2016) point out the pitfalls of taking on such frames and the emotions that are connected with framing-related identities. "Any call for reflection and reframing needs to be acutely aware of and sensitive to the all-too-human, power-laden barriers posed by such framing-related identities" (Ibid, p105).

Prognostic

As Van Hulst and Yannow (2016) have pointed out, identity is embedded within social contexts and is developed via relationships and interactions with others. The social context in Western Himalayas has led to local communities thinking of themselves as different and disconnected from the rest of the country.

This creates an action bias towards an us-and-them mentality where people of GB feel their problems are separate from those faced by the rest of the country and therefore want solutions to their problems to come from within rather than from the outside. The reliance therefore is on the "community" to do something, with the community being local formal and informal non-profit organisations that use charity and volunteer work to help others. Membership within these organisations is usually based on religious sect or location.

When asked what they think should be done in order to adapt to the new reality that they are experiencing, almost all respondents felt the answer lay with a stronger community system. For example, interviewee 5 said the following:

> "Everyone knows that the community will help them when they are in need so everyone helps the community in any way they can. The ones who have money give charity that helps the poor while the able-bodied people, especially young men, volunteer and help out. All boys in high school and college spend some time after school to do some community work."

Therefore, for most people valid adaptation processes are the ones that take place within the region on an individual or regional level rather than on a larger scale. Interviewee 2, for example, bemoaned how her son and other members of the younger generation are not interested in community work but only do it almost out of a sense of necessity and duty, adding that they have to come up with a solution for "the alarming situation" themselves:

> "The problem is being created on the outside but nobody from there will come help us. We can't just sit here, twiddling our thumbs. We have to help ourselves. But the younger generation just doesn't seem to care about the environment or climate change. My own son doesn't want to plant trees, he just wants to ride his bike and hang out with his friends."

This was right after she had mentioned that climate change was being caused by countries in the west and had stated that "not only are these problems being created by them but they also need to be solved by them."

6.2 Risk and information frames

How local communities assess the risk of climate change and what kind of information they accept is directly related to how they perceive adaptation measures to climate change. "Adaptation processes must recognise local identities and experiences and tolerances of risk" (Barnett et al 2021, p6). Much research is dedicated to the importance of local knowledge systems, especially those in indigenous communities (Hiwasaki et al 2014; Swiderska and Malmer 2016). Connections have also been made between the information within these knowledge systems and adaptation processes (Nyong et al 2007; Nakashima et al 2012; Williams and Hardison 2013). "Such knowledge systems are critical in informing local and national adaptation responses because conventional adaptation strategies most often use top-bottom approaches which do not reflect grassroots realities" (Tume et al 2019, p2).

Vink et al (2013) point out that climate change adaptation decision-making is "prone to controversies about the knowledge base and leads to political conflict about interests and priorities (Lazarus 2008, Hovi et al 2009, Lempert et al 2009)" (Ibid, p1). Meanwhile, Kaufman et al (2013) state that actors "often construct risk and information frames that yield highly variable assessments about the level and extent of a particular risk. Additionally, these frames indicate to the disputant which sources of information are reliable and which are not" (Ibid, p2).

Risk and information frames therefore not only determine what information becomes salient to actors but also which sources of information they will accept and which they will not. Based on Kaufman et al's (2013) definition, I coded risk and information frames according to how respondents referred to information surrounding climate change, which sources they labelled as trustworthy and how they assessed the level of risk being posed by climate change and global warming.

Diagnostic

Risk and information frames were closely connected to identity frames, with a strong corelation between people's sense of identity and what kind of information became salient to them.

Interviewee 8 stated that those who come in "from the outside" to warn them about the dangers of global warming should not be trusted:

> "They come in and want to tell us that this is such a big problem and that we should be scared. Those people just want to spread fear and anxiety in the region. You hear about places like Karachi and Lahore where it gets really hot but that won't happen here, so we don't have anything to worry about. The warmer it gets here, the better it is."

Additionally, information and knowledge generated elsewhere was considered untrustworthy by interviewee 6 because they implied that anyone who doesn't have lived experience of these mountains cannot be expected to accurately predict what will happen there in the future:

> "We have seen the glacier our whole lives. Our ancestors have told us about how they work. People come from outside and they think we are crazy when they see us working the way we do to extract ice from the glacier or when they see us living so close to it."

The respondent was discussing how people who are not from the region don't understand their way of life and how tough they are, and therefore warn them about a problem that they are capable of handling.

However, this does not mean that lay knowledge is prioritised and in fact many interviewees were initially unwilling to take part in an interview because they believed that what they say is not important since they are not experts. Emphasis is placed on expert knowledge, but that knowledge must emerge from within the region, with at least two interviewees offering to connect me with local experts they know who would have more informed opinions on melting glaciers. In both cases, these offers included the academic credentials of the expert being recommended, which implies that expertise is defined by them as being related to some sort of academic training. Several people also declined my request for an interview by insisting that I should talk to an expert instead. However, that could just be a polite way to decline doing an interview without saying no outright since that is

considered rude in their culture, especially to guests. These statements took place before the start of the interview — if an interview did take place — and were not recorded since I did not have the respondent's consent yet and therefore are not part of the transcripts. Hence privilege is given to expert knowledge but with the caveat that experts from outside the region are not as reliable sources as local experts. This is in line with Williams and Hardison's (2013) claim that "traditional knowledge held by indigenous peoples has significant political or governance dimensions" (Ibid, p539).

Meanwhile, the lived experience of people right now is different from the doom and gloom that most climate change experts predict, hence they fail to take the warnings as seriously. Interviewee 6 pointed to all the ways people in GB have benefited from climate change:

> "When I was little [around five decades ago], we used to have more than six feet of snow every year in December. We couldn't even leave our backyards. We were stuck in our homes for months. No matter what happened, you couldn't leave the house. Old people were confined to their beds throughout the year because it was too cold for their joints to work, and they were always in pain. Now look at me, I can roam around wherever I want because it isn't that cold. People my age couldn't do that before. How is this a bad thing?"

Similarly, interviewee 8 also discussed the positive aspects of global warming:

> "People come here and tell us that this warming is a problem but I don't see how [it is a problem] when we are able to get more out of it. We used to have one crop yield in the summer before, now we can have two. In the places where they had two yields, now they can have three. You have been able to visit us in April. This was not possible even two years ago due to the snow. This year we only had a few inches of snow here so we could move around; before it used to be more than three feet."

Kaufman et al (2013) state that "risk and information frames depend not just on the disputant's interests, but also on the disputant's training, expertise, level of exposure to the risk, familiarity with the risk, potential for catastrophic impacts associated with the risk, and degree to which the risk is dreaded" (Ibid, p2). This is what I experienced as well since the people who were generally less educated had contrasting risk and information frames as compared to those who had education and were more well-travelled. This was a sentiment echoed by interviewee 9 when he expressed frustration at the lack of worry people in his village feel about the increase in temperatures:

> "They would be more scared if they knew what this will do in the future, but they don't so they are not. They think this is a positive."

Prognostic

The diagnosis of risk and information frames that climate change is a positive means that their prognosis is that there is no need for any adaptation measures. While this was not always explicitly stated, this was implied when salience was given to the benefits of global warming.

Additionally, when it was pointed out that the glaciers are melting at an alarming rate and glacial lake outburst floods are going to become increasingly likely because of it, interviewee 8 who felt that climate change is a positive just shrugged and said that they will deal with catastrophe when they face it:

> "Why worry about something that hasn't happened yet? We will deal with it when it happens."

Interviewee 6 expressed a similar opinion and felt that there is no point in investing in adaptation measures and the problem needs to be dealt with when it arises:

> "There is no point worrying about it now. If something goes wrong, then we will figure out a way to deal with it then. We can't do anything about it right now."

Interviewee 7, who did feel that climate change is a problem, still stated that it is the warmer regions of the country that are really in trouble and that the people of GB don't have much to worry about for the time being:

> "Yes this is a problem but it will take a long time before we get to such worryingly high temperatures in this part of the world like you hear about in Karachi or Lahore."

They added that they have been told by a local expert they know that they are safe for 50-70 years, so they need not worry about it at the moment. When the drastic recent change in temperatures in the last couple of years in the region was pointed out to them, they said that they have been told by experts that the recent changes are more due to the building of large dams in the region than due to climate change.

On the other hand, those who do assess the risk factor as being quite high feel that the contested nature of these risk frames means that it is difficult to bring everyone together to campaign for something to be done to prepare for such events. Interviewee 5 said that they therefore focus on small-scale information campaigns within classrooms:

> "We know everyone is not going to listen so we can't have largescale campaigns. Instead we teach students what needs to be done if there is a climate catastrophe. They learn evacuation and rescue procedures to name a few things in these sessions."

6.3 Authority frames

Woroniecki et al (2019) discuss the relation between adaptation and authority. "Power mechanisms and structures shape adaptation outcomes for individuals and social groups, the measures adopted, and who is identified as requiring adaptation support (Boyd, 2017; Wamsler, 2017; Wamsler and Raggers, 2018)" (Ibid, p1). Meanwhile, Kaufman et al (2013) state that authority frames allow actors to "determine not only which forms of power are legitimate (e.g., governmental, legal, civil disobedience) but also the forms of power that are likely to advance one's own position (e.g., authority, resources, expertise, coalition-building, threat, voice)" (Ibid, p2).

I explicitly look at authority frames in terms of organised power that are "materializations of previously negotiated outcomes regarding societal goals, values, and means, but they may change again once societal goals are renegotiated or specific agents strive for change and reach a new equilibrium (Dyson 1980, Scott 1987, Mahoney and Thelen 2010)" (Vink et al 2013, p4).

I have therefore coded authority frames according to how respondents refer to organisations and individuals with *power to*, defined by Westin (2019) as "the ability to act derived from social order," (Ibid, p75) and is referred to by Woroniecki et al (2019) as the enabling function of power. Hence the focus is on how institutes and individuals with power to, and the avenues that respondents feel are legitimate and within their reach to advance their position are discussed. Similar to the work of Woroniecki et al (2019), these are represented via references to leadership, influence over political decision-making, coping capacity and the ability to influence livelihoods.

Diagnostic

Many respondents felt GB does not get fair representation within the government and complained about their lack of participation in decisions being made that impact them directly. Interviewee 7 gave an example of how they have no say in what infrastructure gets built for them and most of the time when they do get something, it is mainly to benefit someone else in power:

> "Whatever we get, we get by chance, not by choice. This bridge [which connects the city of Nomal to the Karakoram Highway (KKH)], for example, was only made because the Chinese needed an easy route to access their powerplant, so they had to find a way to connect it to the KKH. We were just lucky enough to be in the way."

Interviewee 9 described the lopsided power dynamics in place by pointing to what they perceived to be the unfair nature of the political ladder's hierarchy:

> "Perhaps the least sought-after ministry in all of Pakistan is the Ministry of Kashmir Affairs, and the Prime Minister of Kashmir and the Prime Minister of GB are answerable to that minister. That shows you how little political power we have that even our most important people are under some minister who would much rather have some other ministry."

Elections in GB usually take place two years after they do in the rest of the country, and the political party which wins the federal elections in Pakistan usually ends up in power in GB as well. Interviewee 5 felt this makes the authority of these national parties a less legitimate form of power, especially since regional parties are marginalised because they do not have the same political influence or the budget to compete in terms of campaigning:

> "Whoever wins in Pakistan ends up winning in GB, how is that fair? Where is our say?"

Interviewee 9, meanwhile, favoured local politicians because they were more in touch with local problems and more accessible:

> "We can't just go up to them [local politicians] on the streets either and they stay aloof from the people as well but at least you have some connection to them; someone or the other knows them because they have grown up in this area. It's not like someone who you know nothing about and you have no way to ever reach them."

Schön and Rein (1994) discuss the power of using rhetorical frames to create narratives where some characters end up being framed as heroes and saviours while others become the villains. The government is framed as a villain that needs to be fought when they try to take away people's rights rather than a valid form of authority that exists to help and improve the lives of the people. In a similar vein, regional parties were said to be more in touch with local problems as compared to members of national parties, with interviewee 1 stating:

> "We usually end up having a [prime] minister that comes in from Punjab or some other part of the country. They know nothing about the region except that we have minerals and tourists. They know how to exploit the region but not how to give anything back."

Interviewee 7 meanwhile discussed how they all united against the government when they ended the wheat subsidy:

> "If they take something away from us, like when they took away wheat subsidies a few years ago then we all stood united — then it didn't matter who you were or which part of the country you were from."

Prognostic

Since many of the interviewees consider the government to be aloof, out of reach and a negative entity that has to be fought against rather than as a positive

institution, an action bias is created where asking anything from the government is considered futile.

Daub (2010), while discussing the role of frames in the constant negotiations and renegotiations that take place within society, states that frames can define what is considered as within the reach of the common man and what is not. “Strauss (1978:12) proposes that the structural context in which negotiations take place not only limits what is possible but also shapes “how actors see social order, and what they believe is, for themselves and others, possible or impossible, problematic or possible”” (Daub 2010, p131).

One interviewee stated that “asking the government for anything is like playing the been [the snake charmer’s instrument] in front of a buffalo,” a common saying in the subcontinent used to depict an action as being of no use.

When asked why the people of GB do not protest against the government’s inactions, most respondents answered that they are not violent by nature — implying that violent protests are seen as the only successful means of complaining to the government. Interviewee 4 said:

> “We don’t have it in our nature to go out and burn tires or damage public property, so we don’t protest. We only protest when we are forced to. Like during the subsidy issue [when the government ended a wheat subsidy], we were even willing to take up arms because that [the ending of the subsidy] would have meant starvation for many of us. It had become a matter of life and death.”

This creates a barrier to action where mobilisation towards a campaign for adaptation becomes difficult because the prevalent belief is that there is no point in asking the government for anything.

Instead, people believe that if they are to adapt to climate change — or indeed improve their lives in any way — then the solution lies in separatism, away from the government of Pakistan. Interviewee 9 said this is the only way they can survive in the future:

> “We have everything we need in these mountains. We have the water; we have the minerals. Yes, it is difficult to grow food in the mountains but if we work hard then we can. That’s the only solution, otherwise they [the Pakistani authorities] don’t care about us. They don’t care if we drown [in floods]. If we are to secure our future then we have to look out for ourselves.”

Interviewee 7 supplemented an action bias towards separatism with the frustration they felt towards their ancestors for choosing to give authority of the region to Pakistan in 1947:

> “Our ancestors chose to join Pakistan and they have done nothing since then but take advantage of the region without giving anything back. If we are to solve our problems then we have to regain power back from them.”

7. Discussion

In this section I discuss the results further and their implications on adaptation processes and capabilities, further expanding on RQ3 in the process, as well as some of my reflections based on the interviews and participant observation during fieldwork. Additionally, I discuss some of the weaknesses of this study.

7.1 Climate change treated as a positive

The obvious change in temperatures in the past few years in Western Himalayas and the clearly evident speed with which the sizes of glaciers are changing means that climate change denial is virtually non-existent among the interviewees. One person expressed a degree of scepticism surrounding global warming, stating that the glacier will return to its former size and the retreating is not related to climate change but is rather a cyclical event where seven years of retreat is followed by seven years of expansion. However, that was the exception and most of the respondents felt that the drastic changes in recent temperatures and the fast pace at which the glaciers are melting means that climate change is quite obvious. Despite this, how the change in climate and the risk it presents is framed varied drastically and was generally dependent on the education levels of the respondents.

Those unaware of the concept of anthropogenic climate change driven by the activities of the global west framed the change as a positive, feeling that the situation needs to be celebrated rather than fought or addressed. This was particularly common among the poorer members of society I interacted with and means that it is difficult to create any resonance around the alarming nature of the situation since the positives of global warming are being made salient. In fact, some even felt that people coming to their regions “from the outside” to warn them about climate change have ulterior motives for spreading fear and panic in the region and even deplored the gullible nature of those who are now worried about the situation. This makes it difficult to generate grass-roots will for adaptation measures and therefore reduces political motivation to implement adaptation policies.

Global warming is welcomed by these villagers because it provides them with relief from the bitter cold during the winter months while also improving crop yields and tourism opportunities in the summers. More areas of the Himalayas and Karakoram are becoming accessible for longer, both for locals and tourists, allowing for more avenues to earn money. This has even opened

up the possibility for some people who previously lived semi-nomadic lives and moved across several seasonal villages throughout the year, depending on the seasons, to now settle down without having to move around due to the "friendlier" climate.

When it was pointed out to them that the increase in temperatures also changes the melting rates of glaciers, which leaves them more vulnerable to floods and landslides, villagers celebrating global warming did not always deny the additional risks that come with it but instead stated that it is a potential problem for the future rather than something that needs to be worried about in the present. The argument being that positive outcomes in the present outweigh negative outcomes that may or may not happen in the future. When asked what they think should be done to prevent such calamities, especially with the 2010 floods that killed 1700 people and destroyed over a million homes still fresh in their memories, most such respondents merely shrugged and said that they will just deal with catastrophe when it happens.

On the other hand, people with more education and awareness generally portrayed global warming as terribly risky, with one responding stating that it is "an alarming situation" that needs immediate addressing in order to save their land, their livelihoods, and their way of living for future generations. In doing so, they diagnose the problem in a different manner and suggest measures to prevent further warming and call for individuals to take action to protect themselves from the damage such catastrophes will cause.

Since a lack of education usually goes hand-in-hand with a lack of available resources (Pappas et al 2008), those who are currently framing the situation as a positive are also the ones at the most risk as they have the least resources to fall back upon as a safety net when things do go amiss. These people, most of whom live in abject poverty, are therefore massively unprepared for the risks they face, and their diagnosis makes any preparations to adapt unlikely.

This has the potential to further the power gap between those who have education and resources and those who do not since the educated are eager to adapt to the new reality and urge authorities to take steps towards adaptation while those who are the most vulnerable to climate change are conversely the ones who are the least bothered about adaptation measures. Those planning and implementing adaptation measures must therefore keep in mind this knowledge gap and awareness campaigns explaining the future repercussions of further warning need to be implemented in the region. Additionally, all adaptation measures should first be explained to the public, including why they are being carried out and what they hope to achieve, to improve their chances of being accepted.

7.2 Prioritisation of internal solutions

Climate change information produced within the region was given priority by the locals and so were adaptation solutions created within these communities. Several people discussed the power of community work and stressed on its importance as an answer to the apathy of the Pakistan and GB governments. At least four respondents framed community work as the only saviour against climate change and climate catastrophes, stating that adaptation measures must come from within rather than from the government or through policy.

The portrayal of community work as the chief weapon against climate catastrophe existed regardless of education and awareness levels around global climate change. Those who did not believe that climate change is a negative were still concerned about the rapid rate of deforestation and the increase in landslides due to that. The main solution presented for the drastic recent change in the weather was the community planting more trees in order to counter deforestation. This prescribed action existed even among those who knew about climate change being caused by the Global West, with such respondents believing the answer also lay in village individuals planting more trees.

While stressing on community and volunteering work as climate change adaptation is laudable, framing them as the only possible solutions draws away from the other interpretations of the problem: that this is not a problem that can be solved within the Himalayas by the local communities. This creates a hinderance to resonance around advocacy or sustained political campaigns to influence governance since the tendency to look within makes it difficult to create any social movement, political will or individual emotion demanding change from outside. Due to this, existing adaptation measures are localised and are carried out on the small scale by a collection of concerned individuals. Adaptation efforts being implemented by external organisations and entities must first convince and earn the trust of sceptical local communities implementing largescale adaptation measures and policy.

7.3 Government apathy and nationalistic sentiments

The Pakistan government's apathy to the region is being connected to nationalistic ideas that GB is not part of Pakistan and should work towards independence. For at least four interviewees, people in the Himalayas across the Indian, Chinese and Pakistani borders have more in common with each other than with their respective countries and should not be ruled over by people who do not

care about them and who they have little in common with. Frames can create political and ideological identities that become integral part of actor's worldview so those looking to implement adaptation measures must keep these identities in mind when doing so.

The prevalent feeling of shared identity with those living across the borders of rivalling nations as compared to the identities of those living within the same countries highlights the importance of adaptation measures being taken in collaboration with other countries in the region. For many of the interviewees, the ideal scenario therefore harnesses this sense of shared culture and identity that transcends international borders in order to implement cross-border adaptation measures that create win-win scenarios for all countries involved. Since catastrophes tend not to care about which borders they cross along their paths of destruction, adaptation measures require both zooming in to create a sense of belonging within these Himalayan communities as well as zooming out to reconnect the various communities that share so much with each other but have become divided by relatively recent international boundaries. This can potentially help create collaboration and coordination towards climate change adaptation between rivalling nations.

7.4 Weaknesses

There are several unavoidable weaknesses with this study that need to be mentioned. In this section I ignore the critique associated with frame analysis as any choice of theory will have its strengths and weaknesses and instead focus specifically on the weaknesses within my research.

A case of language

Since frame analysis relies heavily on the use of language in order to see what frames are being constructed and how, I feel that it would have been better had I been able to communicate with individuals in their local tribal languages. However, since that was not possible our conversations took place in Urdu, which is usually the second language of the local communities. While this is better than the use of a translator, I believe that some ideas get lost when people convert their thoughts from their mother tongues into another language. This can also result in decreased willingness to discuss complex, controversial or sensitive matters if the respondents do not feel comfortable enough in expressing certain ideas in their second language. Additionally, as already discussed earlier, translating the data from Urdu to English requires unavoidable input from the researcher and especially increases the chances of

researcher bias when the translator and the researcher are the same person as was the case in this situation.

Inability to speak to and observe women

The conservative nature of Pakistan's cultural and religious structure meant that it was not possible to speak to a lot of women. My participant observations were limited by this as I was unable to interact with a lot of women outside of the interviews due to the segregated nature of society in the region. This meant that my observations were skewed and more male-centric than what I would have liked them to be. While an interpretivist standpoint somewhat overcomes the need to have an exact representation in your sample, it would still have strengthened the study further.

I was considered an outsider

Being a Pakistani, I was able to interact with the locals in a common language and understood a lot of the local traditions, customs and values, but I was still considered, and sometimes felt like, an outsider. Due to this, the locals often seemed eager to portray the best possible image of their region. This was particularly relevant when understanding how the political divide between GB and the rest of Pakistan was framed as they would be hesitant to express negative sentiments about my part of the country. Additionally, the region relies heavily on tourism so creating a positive image increases their tourism opportunities. I feel I was able to slightly circumvent this problem by spending a month with them and hence making them feel more comfortable in expressing and revealing thoughts that they may otherwise not.

Inability to go to Skardu

The biggest logistical omission was my inability to go to Skardu, the district that has the highest number of glaciers in the region. An exploration around adaptation to melting glaciers in the Himalayas seems incomplete without a visit to the region that has the highest number of glacier formations in the world, including the largest glacier traverse in the world. However, the trip became impossible as an earthquake cut off Skardu from the rest of the country via land and all flights during that time were reserved only for residents of Skardu who had been stranded in other parts of the country and vice versa.

8. Conclusion

The drastic nature of global warming in the subcontinent has created an existential crisis for millions living in the region and climate change adaptation is the need of the hour. The complicated nature of the region's politics, identity formation and knowledge systems make adaptation difficult even without taking into account the absence of governmental and societal will, paucity of resources and a lack of understanding and accessibility to the region. In order to succeed, these adaptation measures must ideally be implemented in collaboration with international rivals Pakistan, India, Nepal and China, while being accepted by the local communities living within these mountain ranges along with the general populations of these countries — groups which share very little with each other and are often at loggerheads with one another. The difficulty of the task at hand should only highlight the pressing need for increased action, in terms of research *about* adaptation and *for* adaptation, as well as implementation of largescale climate change adaptation policies.

This study can be a starting point towards efforts to understand and implement cross-border adaptation measures in the Himalayas, with the most successful adaptation measures likely being those that keep the shared identity of Himalayan residents in mind, which were formed before colonial divides were created in the region, while also prioritising indigenous knowledge and regional power systems. In order to do this, similar studies need to be conducted across the other regions of the connected Himalayas, Karakoram and Hindu Kush ranges.

Climate change adaptation in the Himalayas really is a wicked problem par excellence but, on its solutions, depend the lives of millions.

References

Abubakar, S.M. (2020) In Pakistan, meltwater from glaciers is causing devastating flash floods, and the dwindling of ice-shields affects the entire nation. D+C. Available at: https://www.dandc.eu/en/article/pakistan-meltwater-glaciers-causing-devastating-flash-floods-and-dwindling-ice-shields [Accessed May 25, 2022].

Adams, W.C., 2015. Conducting semi-structured interviews. *Handbook of practical program evaluation*, 4, pp.492-505.

Ali, K. (2021) "Gilgit-Baltistan, Azad Kashmir to have 4G internet services," Dawn, 12 October. Available at: https://www.dawn.com/news/1651468 (Accessed: May 25, 2022).

Barnett, J. and O'Neill, S. (2010). Maladaptation. *Global environmental change*, 20(2), pp.211-213.

Barnett, J., Graham, S., Quinn, T., Adger, W.N. and Butler, C. (2021). Three ways social identity shapes climate change adaptation. *Environmental Research Letters*, 16(12), p.124029.

Benford, R.D. and Snow, D.A. (2000). Framing processes and social movements: An overview and assessment. *Annual review of sociology*, 26(1), pp.611-639.

Berger, P.L. and Luckmann, T. (1966). *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Penguin Books

Birbili, M. (2000) Translating from one language to another. *Social research update*, 31(1), pp.1-7.

Bihu, R. (2020). Using Unstructured Interviews in Educational and Social Science Research: The Process, Opportunity and Difficulty. *GSJ*, 8(10).

Borunda, A. (2019) "Climate change is roasting the Himalaya region, threatening millions," National geographic, 4 February. Available at: https://www.nationalgeographic.com/environment/article/himalaya-mountain-climate-change-report (Accessed: May 25, 2022).

Boschma, G., Yonge, O. and Mychajlunow, L. (2003). Consent in oral history interviews: Unique challenges. *Qualitative Health Research*, 13(1), pp.129-135.

Carrington, D. (2022) "Climate crisis makes extreme Indian heatwaves 100 times more likely – study," The guardian, 18 May. Available at: https://amp.theguardian.com/environment/2022/may/18/climate-crisis-makes-extreme-indian-heatwaves-100-times-more-likely-study (Accessed: May 25, 2022).

Chenail, R. J. (2011). Interviewing the Investigator: Strategies for Addressing Instrumentation and Researcher Bias Concerns in Qualitative Research. *The Qualitative Report* 16: 1 255-262 https://files.eric.ed.gov/fulltext/EJ914046.pdf

Craig, T. (2016). Pakistan has more glaciers than almost anywhere on Earth. but they are at risk. The Washington Post. Available at: https://www.washingtonpost.com/world/asia_pacific/pakistan-has-more-glaciers-than-almost-anywhere-on-earth-but-they-are-at-risk/2016/08/11/7a6b4cd4-4882-11e6-8dac-0c6e4accc5b1_story.html [Accessed May 25, 2022].

Daub, S.J. (2010). Negotiating sustainability: Climate change framing in the communications, energy and paperworkers union. *Symbolic Interaction*, 33(1), pp.115-140.

Dunne, S. (2022) Prof. Aseem Prakash in Vox article, "The extraordinary heat wave in India and Pakistan, explained," Washington.edu. Available at: https://www.polisci.washington.edu/news/2022/05/11/prof-aseem-prakash-vox-article-extraordinary-heat-wave-india-and-pakistan-explained (Accessed: May 22, 2022).

Ellis-Petersen, H. and Baloch, S. M. (2022) "'We are living in hell': Pakistan and India suffer extreme spring heatwaves," The guardian, 2 May. Available at: https://amp.theguardian.com/world/2022/may/02/pakistan-india-heatwaves-water-electricity-shortages (Accessed: May 22, 2022).

Entman, R.M., 1993. Framing: Towards clarification of a fractured paradigm. *McQuail's reader in mass communication theory*, pp.390-397.

Eriksen, S.H., Nightingale, A.J. and Eakin, H. (2015). Reframing adaptation: The political nature of climate change adaptation. *Global Environmental Change*, 35, pp.523-533.

From the Newspaper (2021) "Time to give GB its due status," Dawn, 6 November. Available at: https://www.dawn.com/news/1656271/time-to-give-gb-its-due-status (Accessed: May 8, 2022).

Gerretsen, I. (2019) Cnn.com. Available at: https://edition.cnn.com/2019/06/19/world/himalayan-glaciers-melting-climate-change-scn-intl/index.html (Accessed: May 15, 2022).

Gerlitz, J.Y., Banerjee, S., Hoermann, B., Hunzai, K., Macchi, M. and Tuladhar, S. (2014). *Poverty and vulnerability assessment: A survey instrument for the Hindu Kush Himalayas* (pp. vii+-102). Kathmandu: International Centre for Integrated Mountain Development.

Goffman, E., 1974. *Frame analysis: An essay on the organization of experience*. Harvard University Press.

Hensle, L. (2018). *Creating knowledge and considering power: A Frame Analysis of Science-Policy Communication*. Sveriges lantbruksuniversitet (SLU)).

Hiwasaki, L., Luna, E. & Shaw, R. (2014). Process for integrating local and indigenous knowledge with science for hydro-meteorological disaster risk reduction and climate change adaptation in coastal and small island communities. *International journal of disaster risk reduction*, 10, pp.15-27.

Inman, M. (2010) "Settling the science on Himalayan glaciers," Nature climate change, 1(1003), pp. 28–30. doi: 10.1038/climate.2010.19.

Irfan, U. (2022) The extraordinary heat wave in India and Pakistan, explained, Vox. Available at: https://www.vox.com/23057267/india-pakistan-heat-wave-climate-change-coal-south-asia (Accessed: May 25, 2022).

IPCC, 2007: *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.

Jamal, U. (2021) Understanding the geo-strategic significance of Gilgit Baltistan, Global Village Space. Available at: https://www.globalvillagespace.com/understanding-the-geo-strategic-significance-of-gilgit-baltistan/ (Accessed: April 10, 2022).

Jiduc, S. (2021) Research into surging glaciers can reduce flood risk in Pakistan. Preventionweb.net. Available at: https://www.preventionweb.net/blog/research-surging-glaciers-can-reduce-flood-risk-pakistan (Accessed: April 4, 2022).

Kaufman, S., Elliott, M. and Shmueli, D. (2013). Frames, framing and reframing. Beyond intractability, 1, pp.1-8.

Kim, B., 2001. Social constructivism. *Emerging perspectives on learning, teaching, and technology*, 1(1), p.16.

Khan, R. S. (2020) "As Pakistan glacier melt surges, efforts to cut flood risk drag," Reuters, 8 June. Available at: https://www.reuters.com/article/us-pakistan-glaciers-climate-change-trfn-idUSKBN23F03B (Accessed: May 25, 2022).

Kohari, A. (2020) Would you climb a mountain for internet access?, Rest of World. Available at: https://restofworld.org/2020/the-hills-are-alive/ (Accessed: April 10, 2022).

Kulkarni, S. (2020) How and why Gilgit Baltistan defied maharaja Hari Singh and joined Pakistan, The Wire. Available at: https://thewire.in/diplomacy/how-and-why-gilgit-baltistan-defied-maharaja-hari-singh-and-joined-pakistan (Accessed: May 25, 2022).

Kuthning, M. and Hundt, F., 2013. Aspects of vulnerable patients and informed consent in clinical trials. *GMS German Medical Science*, 11.

Li, Y. (2011). Translating Interviews, Translating Lives: Ethical Considerations in Cross-Language Narrative Inquiry. *TESL Canada Journal*, 28(5), pp.16-30.

Lindekilde, L. (2014). Discourse and frame analysis: in-depth analysis of qualitative data in social movement research. *Methodological practices in social movement research*, pp.195-227.

Maher, T.M. (2001). *Framing: An emerging paradigm or a phase of agenda setting*?. Framing public life: Perspectives on media and our understanding of the social world, pp.83-94.

Marino, E. & Ribot, J. (2012). Special issue introduction: adding insult to injury: climate change and the inequities of climate intervention. *Global Environmental Change*, 22(2), pp.323-328.

McIntosh, M.J. and Morse, J.M. (2015). Situating and constructing diversity in semi-structured interviews. *Global qualitative nursing research*, 2, p.2333393615597674.

Mearns, R. & Norton, A. (2010). *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World*. Washington DC: The World Bank

Möckel, F. (2020). *The crucial role of the facilitator: Analysing Identity Construction and Dilemmas.* Sveriges lantbruksuniversitet (SLU)).

Nogués-Bravo, D., Araújo, M.B., Errea, M.P. and Martinez-Rica, J.P., 2007. Exposure of global mountain systems to climate warming during the 21st Century. *Global environmental change*, 17(3-4), pp.420-428.

Nyong, A., Adesina, F. and Osman Elasha, B., 2007. The value of indigenous knowledge in climate change mitigation and adaptation strategies in the African Sahel. Mitigation and Adaptation strategies for global Change, 12(5), pp.787-797.

Pappas, G., Agha, A., Rafique, G., Khan, K.S., Badruddin, S.H. and Peermohamed, H., 2008. Community-based approaches to combating malnutrition and poor education among girls in resource-poor settings: report of a large scale intervention in Pakistan. *Rural and remote health*, 8(3), pp.1-13.

Phillips, H.P., 1960. Problems of translation and meaning. In R. N. Adams and J. J. Preiss (eds) *Human Organisation Research: Field Relations and Techniques*. Homewood, ILL pp.290-9.

Preston, B.L., Rickards, L., Fünfgeld, H. and Keenan, R.J. (2015). Toward reflexive climate adaptation research. *Current opinion in environmental sustainability*, 14, pp.127-135.

Ribot, J. (2010). *Vulnerability Does Not Fall from the Sky: Toward Multiscale, Pro-Poor Climate Policy*. (Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World). Washington DC: The World

Ribot, J. (2011). Vulnerability before adaptation: Toward transformative climate action. *Global Environmental Change*, 21(4), pp.1160-1162.

Schön, D. and Rein, M., 1994. Frame reflection: Toward the resolution of intractable policy controversies. *Basic Book*.

Schwartz-Shea, P. and Yanow, D. (2013). *Interpretive research design: Concepts and processes*. Routledge.

Shigri, A. A. (2021) "GB: a dream unfulfilled," Dawn, 24 November. Available at: https://www.dawn.com/news/1659943 (Accessed: May 11, 2022).

Snow, D.A. and Benford, R.D. (1992). Master frames and cycles of protest. In Frontiers in Social Movement Theory, ed. Aldon D. Morris and Carol McClurg Mueller.

Swiderska, K. and Malmer, P. (2016). Climate Change and Biocultural Adaptation in Mountain Communities: Second International Learning Exchange of the International Network of Mountain Indigenous People (INMIP). International Institute for Environment and Development: London, UK, p.46.

Tume, S.J.P., Kimengsi, J.N. & Fogwe, Z.N. (2019). Indigenous knowledge and farmer perceptions of climate and ecological changes in the Bamenda highlands of Cameroon: Insights from the Bui Plateau. *Climate*, 7(12), p.138.

Washington Post (Washington, D.C.: 1974) (2022) "As record-setting heat blasts Pakistan, a glacial lake floods village," 9 May. Available at: https://www.washingtonpost.com/weather/2022/05/09/pakistan-heat-flood-glacier/ (Accessed: May 25, 2022).

Wasim, A. (2022) “Feedback sought on provisional province status for GB,” Dawn, 6 February. Available at: https://www.dawn.com/news/1673594 (Accessed: April 10, 2022).

Westin, M. (2019). *Rethinking power in participatory planning: towards reflective practice* (Doctoral dissertation, Sveriges lantbruksuniversitet (SLU).

Williams, T. & Hardison, P. (2013). Culture, law, risk and governance: contexts of traditional knowledge in climate change adaptation. *Climatic Change* 120:531–544 https://link.springer.com/content/pdf/10.1007/s10584-013-0850-0.pdf

Woroniecki, S., Krüger, R., Rau, A.L., Preuss, M.S., Baumgartner, N., Raggers, S., Niessen, L., Holländer, L., Beyers, F., Rathgens, J. and Wagner, K.C., (2019). The framing of power in climate change adaptation research. *WIREs Climate Change* 10 (6): e617.

Van Gorp, B. (2007). The constructionist approach to framing: Bringing culture back in. *Journal of communication*, 57(1), pp.60-78.

Van Hulst, M. and Yanow, D. (2016). From policy “frames” to “framing” theorizing a more dynamic, political approach. *The American review of public administration*, 46(1), pp.92-112.

Vink, M. J., Dewulf, A. & Termeer. C. (2013). The role of knowledge and power in climate change adaptation governance: a systematic literature review. *Ecology and Society* 18(4): 46. http://dx.doi.
org/10.5751/ES-05897-180446

Yeatts, M. W. W. M. (1942) “Census Of India 1941 Vol Xxii Jammu Kashmir State Part I.” Available at: https://archive.org/details/in.ernet.dli.2015.62753/page/n29/mode/2up.

Ziauddin, M. (2020) The importance of being G-B, The Express Tribune. Available at: https://tribune.com.pk/story/2272982/the-importance-of-being-g-b (Accessed: April 25, 2022).

Acknowledgements

I would like to thank my supervisor Annette Löf, who has been an immense help throughout this process with consistent feedbacks and motivational words. Similarly I would like to thank all other teachers of the Environmental Communication and Management programme who have been incredible during these two years.

On a more personal level, I am forever grateful to my family, especially my parents, who have always been an infallible support system.

Finally, I would like to thank my favourite mountain, the Nanga Parbat, whose sheer majesty made me fall in love with these mountains in the first place and then later on with those who reside within them.

Appendix 1

Frame kind	Frame Category	Definition	Coding rule	Frame and example
Identity	Diagnosis	Language used to define individual or group identity	How respondents identify themselves within certain groups. Interviewee references himself in context of or as part of a certain social group	People of GB do not share an identity with the rest of the country Women are identified as part of the collective rather than as individuals
	Prognosis	What subsequent action respondents subscribe to in line with their identity	How respondents believe climate change adaptation should work in relation with their identity and what climate change adaptation solutions they believe will be successful/unsuccessful	GB needs to fix its own problems if it is to adapt to the changing climate Women play a role in the adaptation processes but aren't able to adapt to

				climate change on an individual level
Authority	Diagnosis	How individuals and institutions of power are discussed	How respondents discuss government organisations and methods to deal with them. They touch upon leadership, influence over political decision-making and the ability to influence coping capacity and livelihoods	The Pakistan government does not care about the people of GB Government only listens to violent protest
	Prognosis	Which forms of power are likely to advance one's own position	How respondents believe they can make those in power listen to them. What forms of advocacy, protest or campaigns do they refer to as effective	GB should be separate from Pakistan and take power away from the Pakistan government Protests should only take place when the situation gets really drastic since they need to be violent in order to be effective
Risk and	Diagnosis	Assessments about the level and	How they diagnose risk.	Information generated

information		extent of a particular risk, in this case melting glaciers	What kind of stories and metaphors respondents use to describe global warming and melting glaciers	outside isn't valid Climate change is a positive
	Prognosis	What sources to listen to and what sources to not.	What adaptation actions, if any, to take to deal with climate change and melting glaciers	Only information generated from within can be considered valid and that generated from the outside should be ignored Nothing needs to be done about climate change since it isn't a problem but rather a blessing

Appendix 2

Interviewee	Description
Interviewee 1	Small business owner in Ghulkin who also works as a tour guide with international t
Interviewee 2	Teacher in Ghulkin. Has a master's degree from Gilgit university but hasn't left GB
Interviewee 3	Small shop owner in Ghulkin who doesn't have much education and hasn't left GB
Interviewee 4	Small business owner who works as a freelancer. Has an engineering degree from F
Interviewee 5	Works as a freelancer and as a teacher. Has a master's degree in education from Kar
Interviewee 6	Retired army officer from Minapin. Was posted across multiples army camps in GB
Interviewee 7	Hotel worker in Gilgit from Nomal. Works in Gilgit, biggest city and capital of GB,
Interviewee 8	Shop owner in Ghulkin. Old guy with little education who hasn't left GB but has see
Interviewee 9	Hotel owner. Radical young man from privileged background who has a degree and
Interviewee10	Ghulkin housewife. Has only left the village a few times. Can barely speak Urdu and

Publishing and archiving

Approved students' theses at SLU are published electronically. As a student, you have the copyright to your own work and need to approve the electronic publishing. If you check the box for **YES**, the full text (pdf file) and metadata will be visible and searchable online. If you check the box for **NO**, only the metadata and the abstract will be visible and searchable online. Nevertheless, when the document is uploaded it will still be archived as a digital file. If you are more than one author, the checked box will be applied to all authors. Read about SLU's publishing agreement here:

- https://www.slu.se/en/subweb/library/publish-and-analyse/register-and-publish/agreement-for-publishing/.

☒ YES, I/we hereby give permission to publish the present thesis in accordance with the SLU agreement regarding the transfer of the right to publish a work.

☐ NO, I/we do not give permission to publish the present work. The work will still be archived and its metadata and abstract will be visible and searchable.