

# **Analyzing Local Attitudes and Experiences with Climate Impacts in Albania**

By: Mark Bray, Kayla Legatt, Madison Perry, and Bella Speer

Project Sponsor: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

Worcester Polytechnic Institute - Interactive Qualifying Project

## Authorship

Chapter/Section	Primary Drafter(s)	Secondary Drafter(s)	Editor(s)
Introduction	Mark	Kayla	ALL
Background	ALL	ALL	ALL
Methodology	ALL	ALL	ALL

The contents of each chapter labelled with “All” as both Drafters and Editors were the result of a collaborative writing process where sections were divided up between all four authors and drafted. The resulting drafted sections were then combined and edits were made on each section by all authors.

## Table of Contents

1.0	Introduction	5
2.0	Background	10
2.1	Progression of Climate Change in Albania	10
2.2	Identifying Key Stakeholders	16
2.3	Climate Stories as Means to Increase Preparedness	20
3.0	Methodology	25
3.1	Identify Representatives Within the Key Stakeholders At National and Regional Levels	26
3.2	Document Strategies the Albanian People Have Used to Reduce Their Vulnerability to Climate Change	27
3.3	Spread Awareness of The Impact of Climate Change	30
4.0	References	33
	Appendix A: Interview Questions for Experts	41
	Appendix B: Interview Questions for Albanian Residents	42
	Appendix C: Informed Consent Script	43
	Appendix D: Release Form	44
	Appendix E: Shooting Script	45

## List of Figures

Figure 1.1: Map of Albania

Figure 1.2: The potential future impacts of climate change

Figure 1.3: A cloudy haze of pollution hangs over the region of Tirana

Figure 1.4: One of fifteen wildfires blazing across Albania brought on by a long period of extreme heat

Figure 1.5: Shkodër in the aftermath of the 2010 floods

Figure 2.1: Flooding mitigation plans

Figure 2.2: Water, Water, Everywhere

Figure 2.3: Water, Water, Everywhere

Figure 2.4: Worst floods in 100 years hit Serbia, Bosnia, Albania, Greece, and Montenegro

Figure 2.5: 1 million Albanian's have been affected by natural disasters

Figure 2.6: Community members, municipal leaders, and national policy makers working together

Figure 2.7: Bringing all the stakeholders together

Figure 2.8: Vic Barrett, New York

Figure 2.9: Jamie Butler, Navajo Nation

Figure 2.10: Messages from Mandi- India

Figure 2.11: Moudou Pouye, Dakar, Senegal

Figure 3.1: Overview of our goals and objectives

# 1.0 Introduction

The earth's climate has always been in flux. Paleoclimate records of the last 1,000 years indicate that the planet's climate varies naturally due to factors such as solar and volcanic activity, and earth's orbit and CO<sub>2</sub> levels (National Oceanic and Atmospheric Administration [NOAA], n.d.). According to the National Centers for Environmental Information, these factors drive climate system changes such as ice ages and warmer glacial periods. However, climate scientists around the world agree that the environmental changes observed in the last 100 years are highly unusual and are very likely due to human activity (National Space and Aeronautics Administration [NASA], 2019b). Mankind's continued industrialization, burning of coal and other fossil fuels, deforestation, and other landscape changes are the primary cause of this rapid change in climate (Gutowski et. al, 2013; "The Effects", 2019). In fact, due to human activity, global average surface temperatures have increased by more than 0.9 °C since 1906 and global sea levels have risen by 17 cm since the 20th century (National Geographic, 2019; European Environment Agency [EEA], 2011).

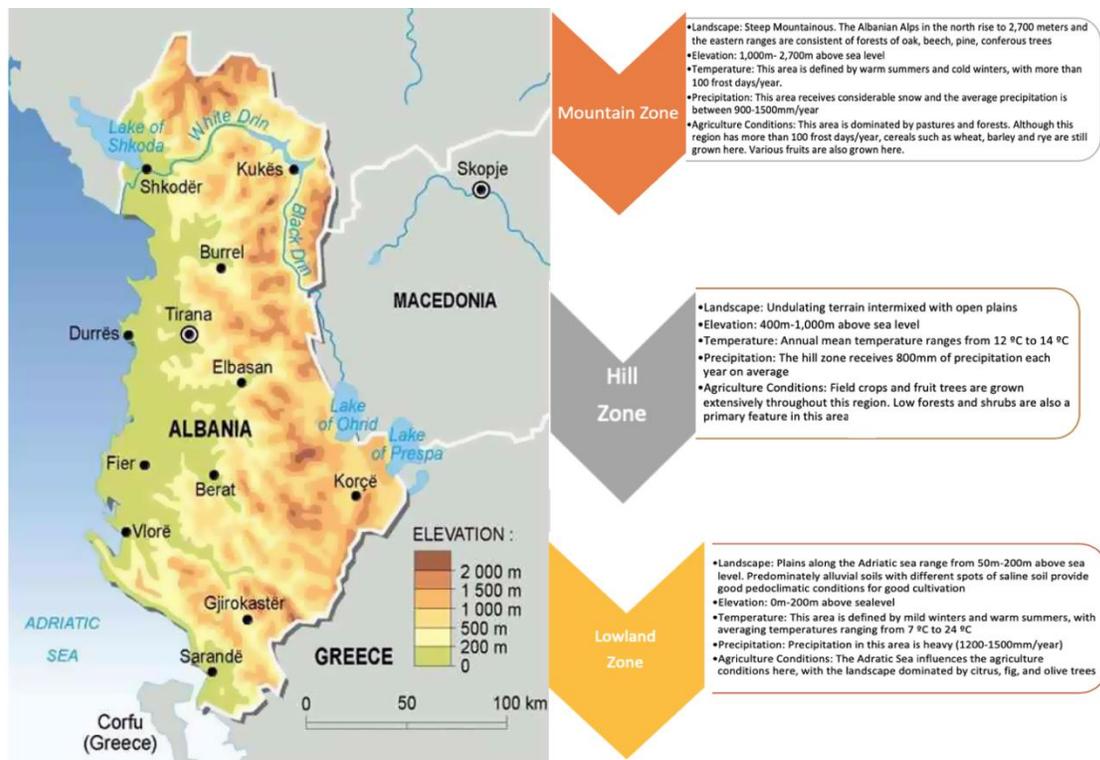


Figure 1.1: Map of Albania (openknowledge.worldbank.org, n.d.)

Other impacts of a changing climate include changes in precipitation patterns, an increase in the prevalence and duration of heat waves and flooding, and more frequent and intense natural disasters (NASA, 2019b).



*Figure 1.2: The potential future impacts of climate change (NASA, 2019b)*

The Albanian people are feeling the impact of a changing climate. Extreme weather events such as flooding, droughts, and heat waves have devastated regions such as Shkodër and Tirana, and pose a significant threat to Albania's economy, ecosystems, and people (BalkinInsight [BIRN], 2018; Dickinson et. al, 2017; Mejdini, 2015; Porja, 2013). The images below exemplify the impacts of climate change in Albania.



*Figure 1.3: A cloudy haze of pollution hangs over the region of Tirana (Taylor, 2019)*



*Figure 1.4: One of fifteen wildfires blazing across Albania brought on by a long period of extreme heat (“Exit- Explaining Albania”, 2017)*



*Figure 1.5: Shkodër in the aftermath of the 2010 floods (Wikipedia, 2019)*

The Intergovernmental Panel on Climate Change (IPCC), a multinational group of over 1,300 scientists, has forecasted a global temperature rise of 1 °C to 5 °C over the next century if greenhouse gas emissions continue unabated. Additionally, temperature increases will not be uniform regionally and “the extent of climate change effects on individual regions will vary over

time and with the ability of different societal and environmental systems to mitigate or adapt to change” (Gutowski et. al, 2013; NASA, 2019b). Projections by the United States Agency for International Development show that a changing climate will negatively impact Albania’s agricultural industry, energy and infrastructure sectors, water resources, coastal regions, ecosystems, and the health of the country’s population.

Recognizing Albania’s vulnerability, the national government has begun work to mitigate the impacts of climate change. International organizations working together in partnerships strengthen the process of confronting climate change and its impact. Our project sponsor, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), is a subdivision of the German government that has worked closely with the Albanian government to improve the country’s climate preparedness since 1988 (GIZ, 2019a). GIZ is working to prevent flooding in Northern Albanian regions such as Shkodër (Figure 1.5) by designing and implementing a comprehensive flood risk management plan. Other work GIZ does in Albania includes encouraging sustainable economic development by improving Albania’s investment atmosphere and the competitiveness of its businesses, and by increasing productivity in the agricultural industry. More recently, GIZ is introducing new strategies of climate change preparedness planning that incorporates the views of local Albanians. To develop the aforementioned flood risk management plan, GIZ spoke with locals impacted by flooding events in Shkodër to amplify their voices and ensure that subsequent flood prevention policies will be effective. Tools that GIZ uses to learn about locals’ perspectives on flood risk include interviews and case studies. Using this information, outreach tools such as flood risk maps, flood preparedness games, and emergency guides are developed and distributed to locals and municipal authorities. These outreach methods are effective largely due to an emphasis on appreciating locals’ perspectives (M. Mansaku, personal communication, September 12, 2019).

Expanding on this work, GIZ would like to develop other initiatives that help the organization appreciate local attitudes about climate change. One initiative that GIZ is interested in exploring is the use of climate stories as a tool to garner public support of governmental action to combat climate change. Although they take many forms, climate stories are often captured through

audio or video clips that are useful in conveying the emotional and personal impacts of climate change. In countries such as the United States, climate stories have been useful in generating discussion on resilience strategies, mobilizing individual action, and providing a platform for impactful stories. To illuminate GIZ's knowledge of climate stories' potential, our project seeks to accomplish the following objectives:

1. Identify representatives within the key stakeholders at national and regional levels
2. Document strategies the Albanian people have used to reduce their vulnerability to climate change
3. Promote discussions about climate impacts in Albania

The goal of our project is to collect the climate stories of Albanian laypersons and experts to assist GIZ as they facilitate interventions with Albanian communities in adapting to the impacts of climate change. We will interview experts and laypersons in Shkodër and Tirana to hear stories of changes they have observed surrounding heat waves and flooding, among other impacts on their environment. Communication with these people will enable us to learn about observations locals are making, their characterization of the issue's urgency, and about the strategies they use to elicit community action. After collecting these stories, our team will create postcards that have a story on one side and a corresponding picture on the other. These postcards will capture region-specific perspectives on climate change and its impacts, and will serve as an educational tool to share the experiences of Albanians in one part of the country with other communities across the country. In addition to being a platform to share people's stories across Albania, we hope that the postcards will generate productive discussions within communities and between locals and officials, as well as spur individuals to adopt practices that mitigate the negative climate impacts.

## 2.0 Background

This chapter discusses the impacts of climate change in Albania, the work that various agencies have undertaken to prevent future catastrophes, and GIZ's efforts to build local communities' climate resilience and increase Albania's climate preparedness. Section 2.1 examines climate changes in Albania since the 1960s, the toll that extreme weather events have had, and presents predictions for the country's future given current climate trends. Recognizing this development as a threat to its people, economy and diverse ecosystems, the Albanian government has begun working in conjunction with organizations like GIZ to improve the nation's preparedness for the impacts of climate change. GIZ's interest in pursuing this project and the key stakeholders' importance in the effort to improve climate preparedness in Albania are identified in section 2.2. The last section makes the case for the use of climate stories as a means of encouraging individual and community action to mitigate the impacts of climate change and as a tool to spur collaboration among the key stakeholders. It presents case studies looking at the efficacy of climate stories used around the world, explains GIZ's interest in using climate stories as a community engagement technique, and explores how they can be effective in Albania.

### 2.1 Progression of Climate Change in Albania

Albania is a small country located along the Adriatic Sea in Southeast Europe (see Figure 1.1) (Woodcock, 2016). One-tenth the size of Italy, Albania borders Montenegro and Kosovo to the north, Macedonia to the east, and to the south by Greece ("Size of Albania compared to Italy", n.d.). Hills and mountains with elevations of more than 200 meters cover almost three-quarters of the Albanian landscape; the Dinaric Alps span the entire northern and central portions of the country while the Pindus Mountains dominate the southern skyscape (Prifti & Biberaj, 2019). West of the mountains and stretching about 30 miles inland from the Adriatic Sea, low, fertile plains allow the country's agricultural and industrial sectors to thrive (Prifti & Biberaj, 2019). Like many Mediterranean countries, the Albanian climate features warm, dry summers, and mild, wet winters. Due to differences in elevation, local climates can vary across the country

(Prifti & Biberaj, 2019). Proximity to the Adriatic and Ionian seas allows the western region of the country to have an average daily temperature high of 29°C and a low of 20°C in August. On the other hand, the mountainous regions have an average daily temperature high of 33 °C and an average daily temperature low of 22°C in August (“Average Weather in Shkodër”, 2019).

For the past several decades, Albania has suffered from an increase in the intensity and frequency of droughts, floods, and heat waves—extreme weather events that may be exacerbated by climate change. Drought conditions are typically tracked by indices that monitor precipitation shortages, soil water deficits, reduced river flow, or groundwater replenishment levels (Bardhi, et al., n.d.; “Droughts in Albania”, n.d.). Increases in global temperatures intensify droughts because it is partly the result of greenhouse gas emissions, which trap moisture from land, lakes, and rivers in the atmosphere and decreases precipitation over land (Staedter, 2005; The Climate Reality Project, n.d.). The 1989-1991 drought was one of the costliest and most devastating droughts in Albanian history. It affected over 3 million people and estimates from the World Bank place its cost to the economy at around \$24 million (Food and Agriculture Organization of the United Nations [FAO], 2018). Because droughts are considered slow-onset phenomena, their effects are better measured over longer periods of time (FAO, 2018). This particular drought, for instance, reduced Albania’s GDP—a measure of the total monetary value of all finished goods and services in a country—from \$2.3 billion in 1989 to \$1.1 billion in 1991; it took almost six years for economic productivity to return to pre-drought levels (“Albania Climate Change and Agriculture”, 2011). The 2007 drought is another example of a devastating drought in Albania. While it was less extensive than the 1989-1991 drought with regard to the area affected, it was very severe in localized regions (European Drought Centre, n.d.). The drought caused energy shortages as the production capacity of the Fierza hydroelectric power plant was decreased by 33 percent and the dry conditions sparked 352 wildfires in forests and natural parks throughout Albania (European Drought Centre, n.d.; FAO, 2018.; Bardhi et al., n.d.).

Heat waves are another example of climate impacts in Albania; they are generally shorter-lived than droughts and are defined as consecutive days with high air temperatures over a region

(Porja, 2013). Heat waves are usually less well-known among the population because their effects are not as visual as those of other climate events like droughts and floods, however, their effect on the health and well-being of a population cannot be ignored. Data published by the Journal of Earth Science and Climate Change showed that 61 heat wave episodes took place in Tirana and Shkodër between 1982 and 2012. Further analysis revealed the frequency of heat wave events had increased in the last two decades and that 74% of the recorded episodes took place after 1996 (Porja, 2013). Direct impacts of heat waves include heat stress, heat stroke, and heat related deaths, particularly among the elderly and individuals who have a reduced ability to care for themselves (“Protecting Health From Climate Change In Albania”, n.d.). Heat waves can exacerbate pre-existing conditions such as “cardiovascular, respiratory and renal diseases, diabetes, neurological disorders and psychiatric illness” (United States Agency for International Development [USAID], 2016, “Protecting Health From Climate Change In Albania”, n.d.). It is well documented that urban regions typically have higher temperatures than rural areas (Dervishi et al., 2012). Tirana’s high population density and air pollution make the heat island effect in the region a large public health concern (Dervishi et al., 2012). The heat island effect is the build-up of heat in an urban area due to inefficient air circulation, heat generation and reflection from buildings and vehicles, as well as a lack of vegetation (Environmental Protection Agency [EPA], 2019, “Protecting Health From Climate Change In Albania”, n.d.).

Albanian communities are doubly impacted by increases in air temperatures because when rainfall does occur in drought-stricken areas, it falls torrentially and the drier soils are less able to absorb the water, increasing the likelihood of floods (The Climate Reality Project, n.d.). Sea level rise, soil erosion, deforestation, and unregulated construction also contribute to flooding events and compound their impact (“River floods in Albania”, n.d., USAID, 2016). The flood of 2010 is among the most memorable and devastating floods in Albania’s recent history. Continuous rainfall, fast-melting snow from the mountains, and the unexpected release of water from the Drin hydropower system caused the banks of Lake Shkodër and Buna-Drin rivers to overflow, flooding the Shkodër region (“River Floods in Albania”, n.d., Dickinson et al., 2017). The Shkodër region endured 900 mm of rainfall over the course of a single month, which is approximately half of the region’s average annual precipitation (Dickinson et al., 2017). The

flood displaced 14,200 people, directly impacted the lives of 59,604 people, forced six health centers and multiple national roadways to shut down, and drowned 3,710 domestic animals (Dickinson et al., 2017). In all, the 2010 flood caused approximately \$715 million in damages, which amounted to about 6% of Albania's GDP for that year. The images below show the aftermath of the 2010 floods and other recent flooding events to capture the magnitude and severity of flood impacts in Albania.



*Figure 2.1: Flooding mitigation plans (Davies, 2016)*



*Figure 2.2 & 2.3: Water, Water Everywhere (Diers, 2010)*



*Figure 2.4: Worst floods in 100 years hit Serbia, Bosnia, Albania, Greece and Montenegro (The Telegraph, 2010)*



*Figure 2.5: 1 million Albanians have been affected by natural disasters (Independent Balkan News Agency, 2018)*

From infrastructural damage to habitat destruction and health risks, it is clear that extreme weather events such as floods, droughts, and heat waves pose a significant threat to Albania's economy, ecosystems, and people (BIRN, 2018; Dickinson et al., 2017; Mejdini, 2015; Porja, 2013). Projections from the World Bank predicts Albania to have a 2 °C increase in mean annual temperature for winter and summer by 2049 and an 8% decline in precipitation patterns over the same period ("Albania Climate Change and Agriculture", 2011). In addition to making Albania more vulnerable to destructive weather events, a changing climate threatens Albania's energy sector, agricultural industry, and ecosystems. Albania is almost entirely dependent on hydropower for electricity generation, and the Drini River Basin supplies more than 90% of the country's domestically produced power (International Hydropower Association [IHA], n.d., USAID, 2016). While capitalizing on hydropower production helps reduce greenhouse emissions and improves air quality, it increases Albania's vulnerability to climate change ("Energy in Albania", n.d.). Decreases in precipitation in the future will lead to a diminished capacity to meet the country's energy demands and may force Albania to import electricity from other countries (IHA, n.d.). Increased summer and winter temperatures and decreased precipitation also does not bode well for the agricultural industry. While this sector accounts for less than a quarter of Albania's GDP, it employs nearly half of the country's workforce ("Albania - Employment in agriculture", n.d.). Changes in weather patterns affect farmers in several ways; it could change the growing cycle for farmers, alter crop yields, increase soil salinization and desertification, increase livestock mortality and reduce productivity, and introduce new pests and diseases (USAID, 2016). Lastly, the changing climate puts Albania's ecosystem at risk. About 30% of Europe's plants and 42% of its mammals can be found in Albania, however, many of these species face higher environmental stresses and some are endangered ("Biodiversity in Albania", n.d.; USAID, 2016). Droughts, landslides, and floods contribute to habitat shift, losses, or fragmentation as they disrupt the migration patterns of several species (USAID, 2016).

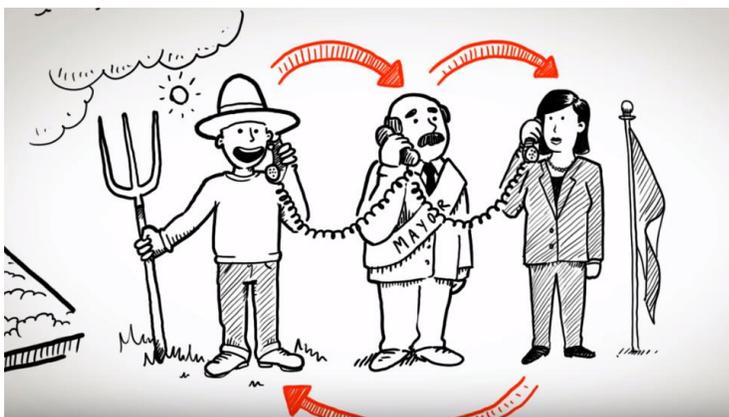
Our project group has chosen to focus on developing resilience to heat waves and flooding in Tirana and Shkodër. We selected these two cities primarily due to their contrasting population demographics. It would be advantageous to analyze local attitudes and experiences with heat waves in Tirana due to its congestion and susceptibility to the urban heat island effect.

Conducting a similar analysis in Shkodër about flooding may provide our group with an alternate perspective as the region is much more rural and variation in geological structures creates a different climate change impact.

## 2.2 Identifying Key Stakeholders

There is widespread acknowledgment of the threat that climate change poses to Albania by government officials, organizational leaders such as GIZ, and the scientific community (“Republic of Albania Ministry of Environment, Forestry and Water Administration”, 2009; GIZ, 2015). In fact, 97% of climate scientists around the world agree that the earth’s climate is warming and that there is a high likelihood that the trends seen over the last century are due to human activities (NASA, 2019a). Albania is a signatory to the Paris Climate Accords and its government has taken steps to mitigate the impacts of climate change. Some of these steps include the National Strategy on Climate Change (NCCS), Mitigation Action Plan (MAP), the National Adaptation Plan (NAP), and the Second and Third National Energy Efficiency Action Plan (NEEAP). In 2015, the government launched the National Action Plan to “identify and assess institutional arrangements, policies and capacities to improve overall coordination” of climate mitigation efforts (NAP Global Network, 2018). While the project is ongoing, its implementation has allowed the Albanian government to assess current climate change information and identify gaps in their development. The NCCS and MAP summarize and systematize existing plans and strategies, providing a comprehensive assessment of the action plans in Albania (United Nations Development Programme [UNDP], 2018). The plans aim to reduce Albania’s vulnerability to floods, increase the adaptive capacity of the agricultural sector, ensure that drinking water remains uncontaminated regardless of the impacts of climate change, and to integrate climate change adaptation in all processes of planning and development in Albania (UNDP, 2018). To these ends, the Albanian government continues to partner with foreign and domestic groups to increase the country’s climate preparedness. Organizations that work with the government include our sponsor, GIZ, EDEN (Environmental Center for Development, Education and Networking), EXINN Technology Center, and SHUKAlb (Water Supply and Sewerage Association of Albania).

GIZ began working in Albania in 1988 to help the country develop economically and to establish its new democratic government (GIZ, 2019b). With regard to climate change in Albania, past projects led by GIZ include the establishment of a fund to preserve South-east Europe's biodiversity, the integration and implementation of waste management strategies, and the creation of flood risk management techniques (GIZ, 2015). GIZ acknowledges that reduction of greenhouse emissions and adaptation strategies must be used in concert in order for climate preparedness measures to be effective (GIZ, 2012). The organization also recognizes that adaptation is a learning process and that people involved at all levels of the fight against climate change—from locals to city officials, to the Prime Minister—must strive to continually improve their adaptation strategies (GIZ, 2012).



*Figure 2.6: Community Members, Municipal Leaders, and National Policymakers Working Together (GIZ, 2012)*

*Figure 2.7: Bringing all of the Stakeholders Together (GIZ, 2012)*



GIZ's emphasis on involving local actors and communities in the decision-making process and the implementation of mitigation plans is evident in several of its projects in Albania. To implement waste management strategies, for

instance, GIZ supports municipalities in “mobilising their residents to get them more involved in the new concepts of integrated solid waste management. This entails information campaigns to encourage waste separation and composting, and the acceptance of fee payments,” (GIZ, 2019c). While the project is fairly recent, the creation of tailored training courses in addition to awareness campaigns underscores “the importance of a participatory approach with broad-based civic involvement, especially including the marginalised groups engaged in the informal collection of recyclable waste,” (GIZ, 2019c).

Another project in which the perspectives of the locals are integrated with discussion about the solution was the flood risk reduction project in Shkodër. Following the 2010 flood, GIZ embarked on an awareness campaign to teach local people about the best ways to prepare for a flood and what to do during the flood (Dembowski, n.d.). Bringing together locals, national administrative bodies, universities, rescue services, utility companies and non-governmental organizations (NGOs), one regional and eight local flood-risk management plans were developed (Dembowski, n.d.). The plans allowed about 30,000 people in the Shkodër region have warning ahead of impending flooding events and give emergency services ample time to prepare for potentially dangerous situations (Dembowski, n.d.). Reflecting on the success of the plans, GIZ found that there were discrepancies between locals receiving the flood warnings and their utilization of the recommendations (Dickinson et al., 2017). Striving to involve locals in discussions on an effective solution, GIZ worked with a group of students from Worcester Polytechnic Institute in Massachusetts, USA. They sought not only to raise awareness of the “measures individuals and community members can take, ...[but] to support stakeholder agency regarding best practices and effective decision-making in the event of a flood” (Dickinson et al., 2017). The group developed several outreach materials that set out specific preparation steps such as establishing family emergency plans and having stocked emergency kits (Dickinson et al., 2017). The outreach materials included a video, an interactive facilitated game called, “Before the Flood,” and a Fill-In Emergency Guide to compliment GIZ’s work (Dickinson et al., 2017). When implementing these methods, GIZ was able to interact with local families and individuals to set out specific preparation steps and early evaluation of these

strategies indicate that these efforts have been successful in engaging community members to prepare for flooding events (Mansaku, 2019; GIZ, 2019d; Dickinson et al., 2017).

Albanian residents remain the most important stakeholders when discussing any effort to prepare Albania for the impacts of climate change. Often, when scientists and policymakers talk about climate change, they fail to consider and incorporate the stories and experiences of local people and communities (England, 2019). Branden Johnson, a scholar and researcher from the University of New Hampshire, notes that scholars often view knowledge and ignorance as two ends of a spectrum. Johnson notes that researchers sometimes impose a necessity to educate laypersons, suggesting that they are ignorant of a certain topic (Johnson, 1993). However, when talking about climate change, even though laypersons may not have all the facts and figures, they are a valuable source of information. Local communities living through and adapting to the impacts of a changing climate offer an important and equally valid perspective on the issue being discussed (England, 2019). Accordingly, it is critically important that local communities remain involved in climate impact mitigation discussions and that processes are developed to integrate both local and scientific knowledge (Kettle et al., 2014). As evidenced by GIZ's efforts in reducing flood risk, doing so enhances "the value of risk-based management approaches, [facilitates] group learning and planning processes, and [supports] the capacity of communities to prepare for change" (Kettle et al., 2014).

There are three main stakeholders in Albania's quest for climate preparedness: individuals and businesses, organizations, and the Albanian government. Albanian residents and businesses are the most important stakeholders in this project because they are directly affected by climate change impacts. Organizations such as GIZ are indirectly impacted by climate change, but are directly involved in policy making and adaptation efforts. Due to the effectiveness of GIZ's efforts to empower local communities to reduce their vulnerability to flooding, GIZ would like to explore other means of inspiring action by local communities. Our group will be exploring the extent to which climate stories can be used to raise awareness of, and motivate individual and community action of heat waves and flooding in the Tirana and Shkodër regions.

## 2.3 Climate Stories as Means to Increase Preparedness

GIZ's work in Albania has demonstrated that communication and framing about climate change are integral parts of decision making and the implementation of positive change. Education and awareness campaigns are helpful techniques to increase general knowledge of a topic, but "engagement goes beyond simple awareness of the problem: it includes caring, motivation, willingness to act, and action itself," (Scannell & Gifford, 2017).

Anthony Leiserowitz, a human geographer at Yale University, has written extensively about strategies to improve communication about climate change. An expert on public opinion and public engagement with climate issues, Leiserowitz recommends five strategies to elicit social engagement and include local communities in climate adaptation and policy making. The strategies are as follows: emphasizing climate change as a present, local, and personal risk, facilitating more affective and experiential engagement, leveraging relevant social group norms, framing policy solutions in terms of what can be gained from immediate action, and appealing to intrinsically valued long-term environmental goals and outcomes (Leiserowitz et al., 2015).

### Techniques For Improving Climate Change Preparedness

Climate stories can be an effective tool for climate change preparedness because they provide "an educational and artistic forum for sharing stories about personal and community responses to climate change," (Climate Stories Project, n.d.). Often taking the form of video or audio clips, climate stories provide an intimate understanding of the effects of climate change by sharing the "emotional and personal impacts that climate change [has on people's lives and] ... the positive actions [they] are taking in response" (Climate Stories Project, n.d.). The purpose of climate stories is to facilitate climate change preparedness, build resilience in communities, and "bring an immediacy to the sometimes abstract nature of climate change communication" (Climate Stories Project, n.d.). In this way, climate stories effectively accomplish the first four strategies for inclusive climate adaptation policies set out by Anthony Leiserowitz.

### The Importance of Storytelling

Storytelling has always been an important part of human tradition; stories have and continue to serve as a communal pool of knowledge, a tool for learning and teaching, and a repertoire of

local lores and legends (Words Alive, 2018). A good story engages our curiosity and emotions, and when told well, stories have the power to inform, change minds, and inspire action (The Health Foundation, n.d.). Marshall Ganz, a Harvard University professor wrote of the power of stories in social movements saying: “storytelling is how we develop individual and collective identities that define the ends we seek... Storytelling is how we access the emotional, or moral, resources for the motivation to act on those ends” (Ganz, 2016, p.4). The identity of the storyteller is as important as the story itself. Revealing the identity of the storyteller establishes his or her credibility, situates the storyteller in the context of the story, and links him or her on a journey with their listeners (Ganz, 2016, p.4) . There exist several organizations dedicated to using climate stories as a means of informing and motivating action to combat the impacts of climate change; a few examples of these groups—and the stories they have shared—are sampled below:



VIC BARRETT | NEW YORK

“I was 14 or 15 the first time I thought about climate change in Honduras. We were at our house, which is close to the beach, and it’s also where my mom grew up and lived her whole life. She was talking about how when she was younger, they used to have to walk a little bit to get to the beach, and now it’s just right there. I remember being on the beachfront and seeing that the community had put together these sand, rock, walls, and seeing telephone poles that were in the ocean that didn’t used to be there. I remember thinking, these people, my people, don’t necessarily have the resources or access to knowledge to fully understand what this is and how it’s impacting them, but it’s clearly a huge presence in their lives every day. And it’s because of emissions from where I’m from and actions of people around me and my peers. The society that I live in is drowning the society that I’m from.”



JAIME BUTLER | NAVAJO NATION

“Because of our drought, the sand around Cameron became super dry. Then, because of the winds, nothing was keeping it in one place. So we had a reservoir, and it dried up. Then one day it rained very hard. And I remember back when I was smaller, the rains used to be really nice—smooth and consistent. But this rain was very harsh, and a lot of water came down all of a sudden. And it caused the reservoir to fill up, which is sort of good. But then the next few days after that, it was super dry, so it weirdly resulted in dry sand on the top layer. And the lake was super muddy, almost like tar. And after the rain, wild horses came to this one little puddle. They tried to get to the puddle, and it was all like quicksand, and they didn’t see it because the topsoil blew over it, and they couldn’t get out. It resulted I think in one-hundred-twenty horses found dead in that area.”

*Figures 2.8 & 2.9: Vic Barrett New York, Jaime Butler Navajo Nation (Our Climate Voices, n.d.)*



Figure 2.10: Messages from Mandi - India (Reymann, 2019)

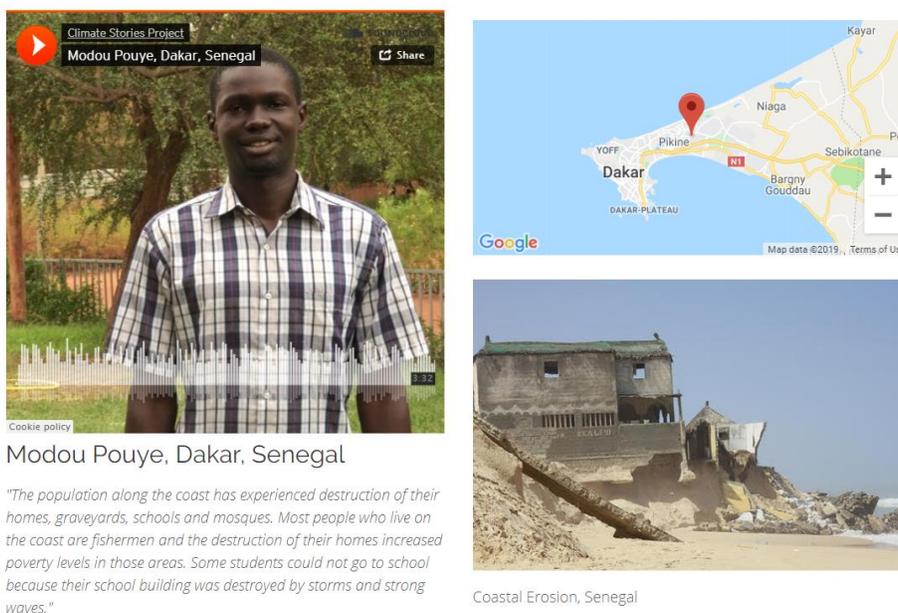


Figure 2.11: Moudou Pouye, Dakar, Senegal (Climate Stories Project, n.d.)

Climate change means different environmental changes in different areas of the world. For example, in some places, climate change is best seen through extreme rainfall and flooding, but in other places, evidence of climate change can be seen in heat waves. For this reason, organizations working to increase climate preparedness must frame the issue in an applicable way to the community with which they are seeking engagement. This is the advantage of climate stories; climate stories humanize climate impacts through storytelling, centers the

voices of those most affected, and delivers to the listener actionable steps that can be taken or resources that can be used to increase preparedness. Our sponsor, GIZ, is interested in the extent to which climate stories may be used to engage locals in discussions on heat wave and flood mitigation strategies and to motivate action. Overall, according to the article “Creative Climate Communications” “storytelling techniques and ways of discussing climate change in the hopes that productive communication around the topic will lead to more constructive engagement” (Evans, 2019). Telling stories about climate change are more intriguing to the average person rather than hearing that their country of residence is in a climate crisis (Evans, 2019).

Using storytelling as a means to increase climate change preparedness includes a couple challenges. One challenge is not letting the political scene in Albania overwhelm our interviews. Politics are not a significant part of this project, however, they are heavily intertwined in important national issues. Hence, we will not engage in any political debates and will steer conversations back to the personal impacts the interviewee has experienced. In these situations, it is essential to be aware and respectful of Albanian citizen’s feelings on how their stories are shared as political topics may come up while interviewees are sharing stories. Another challenge may be the language barrier between our group members and Albanians we speak to who may not speak English. We will need to work closely with our translators to ensure that they not only understand the goal of the interviews and our project, but can help us ask questions in a way that is understandable. We will do this by developing relationships with the translators we are working with prior to the interview process. The last challenge we may face is related to Albanian culture. Albanians are known to be very hospitable, and our group may be invited into people’s homes to enjoy a meal with the family before interviewing Albanian residents. The challenge in this situation will be to conduct an interview in a timely manner so that all our project objectives can be met.

There are many benefits to using storytelling as a means to increase climate change preparedness. First, personal stories tend to generate empathy and encourage the viewer/reader to feel a need to help. There is also a sense of credibility that comes from locals

telling personal stories that strengthens the overall message being portrayed. Storytelling provides an outlet for lessons, warnings, and introspection with easy communication (Walsh, 2016).

### Options for Outreach

The Climate Stories Project provides an educational and artistic outlet for individuals to share personal and community responses to climate change. These stories are relevant to Albania because they can give locals a voice and enable scientists and policymakers to understand how the climate is directly impacting people.

Increasing climate change preparedness for Albanian citizens is aided by the development of outreach materials that are appealing and have an impact on behavior and action. The gap this project is aiming to fill is not to solve climate change, but to help address people's inability to tackle climate impacts by using outreach materials to provide Albanian residents a sense of urgency into action.

## 3.0 Methodology

The goal of our project is to collect the climate stories of people that live in Albania in order to assist GIZ in facilitating discussions among Albanian communities as they adapt to heat waves and flooding as a result of climate change. The stories we collect will display to our sponsor the perceptions of Albanian residents in a way that will enable GIZ to better help communities as they adapt. The deliverables we create will aim to tell a story of each region which will promote the importance of climate change preparedness and bring awareness to the direct impacts. Our project objectives are as follows:

1. Identify representatives within the key stakeholders at national and regional levels
2. Document strategies the Albanian people have used to reduce their vulnerability to climate change
3. Promote discussions about climate impacts in Albania

Our objectives and methods are summarized in the flowchart below, and then described in greater detail.

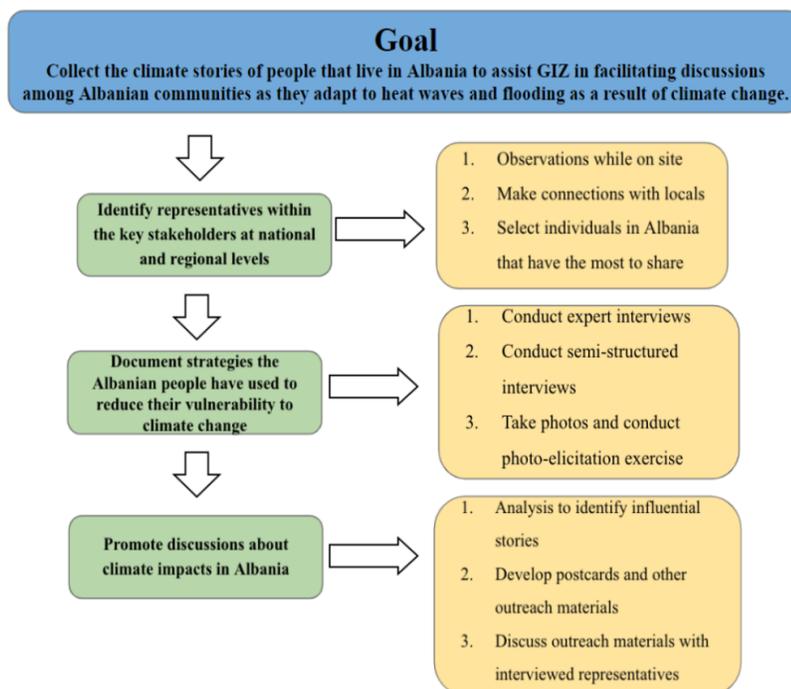


Figure 3.1: Overview of our goals and objectives

### 3.1 Identify Representatives Within The Key Stakeholders At National And Regional Levels

To be productive when collecting climate stories, it is important to identify the people who will best represent the group they belong to. Telling a complete story is possible when all views are taken into consideration, so we will aim to reach experts, laypeople, and contrarians. Within the key-stakeholders we identify during our research process, the groups that we plan to focus on are experts and laypersons in Tirana and Shkodër. These two groups have the most experience with the changing climate impacts and thus have the most to share. The first phase of our project will include making on-site observations, meeting people, and selecting a diverse group of individuals in each region in order to have a variety of stories to share.

The additional knowledge we seek will be best gained when we arrive in Albania, since we can make our own observations and ask experts direct questions about their experience working and living in Albania. While walking around each location, gaining a visual understanding of each region will help us understand what elements are unique to each region. Specifically in Tirana, we will look for evidence of adaptations to heat waves. For example, we will observe the frequency of personal air conditioners and the neighborhoods they are located in, as well as the locations and frequency of green spaces. While in Shkodër, we will be looking for Albanian residents who have lived in the region for a significant period of time and for evidence of adaptations to landslides and flooding such as elevated houses. Since we plan to interview locals about the area they live in in the second phase of our project, it is important for us to visualize what they are talking about. Using observations, we plan on getting a feel for the region. This will help us be more informed about the environment of their community and develop follow-up questions on the spot.

The connections we make during our first weeks in Albania will begin the relationships we hope to make with locals throughout our planned interview process. To start off our interviews, we will speak to people we meet through our sponsors and advisors. Additionally, we may meet people in casual public settings who are interested in speaking to us in a more formal setting.

Having an understanding of the local environment and culture will make us more informed interviewers.

A secondary task relevant to gaining knowledge at the beginning stages of our project will be establishing connections with our translators and our interviewees. We plan to ask our sponsor, GIZ, to pair us with local university students to translate our interviews. Our group will meet with the translators multiple times before we conduct interviews to acquaint ourselves with them, make sure that the students are comfortable with us, and that the students understand the objectives our project aims to achieve. This will happen in an informal setting by getting to know each other and sharing our current ideas about our project. From working with and creating a friendly relationship with these university students, it is our hope they will connect us to their family and friends as additional sources for our project. If we are able to connect to these people, we aim to build a relationship with them and if offered dinner, for example, we will accept and stay for dinner.

### 3.2 Document Strategies the Albanian People Have Used to Reduce Their Vulnerability to Climate Change

Based on our goal, this objective focuses on recording personal stories from laypersons and experts that display resilience to change. Our role as a team is to listen and collect information that highlights the importance of climate preparedness. This objective will involve recording stories from people of all backgrounds in the cities of Tirana and Shkodër. Our team plans to document perceptions and adaptations through photographs and audio clips, and with the assistance of translators, conduct semi-structured interviews of individuals and groups of people.

All interviews will be conducted in a semi-structured manner, where our team has a list of guiding questions that ensure the conversation stays on track but enables the interviewee to share their personal stories (Barriball, 1994). We will have a translator accompany us to all interviews where their services are needed. Based on our pre-established connection with the translators, they will be expected to translate the whole conversation at the time of the

interview, but translators are expected to understand the objective of the conversation to help steer it in the right direction. The role of the translators will be to translate each question and response directly after they are spoken (Alamoudi et al., 2015). Additionally, we will record all interviews using audio equipment provided by the WPI Global Lab, which includes a lapel mic and a handheld audio recorder. We will aim to interview people from twenty and older due to the fact that anyone younger would not have been around long enough to experience significant climate change. In total, we are looking to conduct 10 interviews, with 4-6 interviews per region. Below are a few takeaways that we hope to gain from our semi-structured interviews. For a complete list of the questions we will be using to guide our conversations, see Appendix A and B.

- Can you describe an instance where you noticed climate change directly affecting your everyday life?
- How is growing up in Albania today different than when you were a child?
- What is your favorite activity to do outside? Or what activity do you spend the most time doing while outside?

The key-informant interviews will take place during the first two weeks we arrive in Albania. We will first look to our sponsor, GIZ, to obtain local expert contacts, but as we speak to more people we hope to make our own connections. Additional sources we hope to reach are academic professionals at local universities, and municipal authorities such as the Mayor of Tirana. Interviews with laypersons will be planned for weeks three and four, with a weekend trip to Shkodër planned during that time.

Before the physical interview begins our translator will read our Informed Consent Script (Appendix C) to our interviewees. This will provide the interviewees with knowledge about what our project is about, why we are conducting the interview, and it gives the interviewees time to ask us any questions they may have before the interview begins. During this time, we ask if we can do an audio recording of the interview for our future reference in developing outreach materials. Post each interview we will have the interviewees fill out the Release Form (Appendix D) to give consent enabling us to use the interview for our outreach materials. The

interviewee has options of boxes to check off depending on what they are comfortable with us sharing. When interviewees sign this form it provides our group with consent for the interviews we are conducting and enables us to use the information from the interview to develop and share postcards and quote the interviewee in our WPI final report.

During our observations and interviews in each region, our team will also take pictures that capture the local scenery, document characteristics that puts the region at risk in the event of extreme weather phenomenon, or records locals' adaptations to mitigate climate impacts. To complement the stories, we will be taking pictures that add a visual element to the final deliverable. Two of our current group members take photographs as a hobby, so with their experience and equipment, we will be taking pictures of landscapes and people. To ensure we collect photos relevant to our project topic, we will use a shooting script. This constitutes a list of questions to be answered through the photographs we take (Rose, 2016). An example of a question is: *What methods are people currently using to combat the heat?* For our complete shooting script, please refer to Appendix E. Additionally, we will use photo-elicitation to obtain pictures from the Albanian peoples' perspectives. Photo-elicitation is a method where we ask our subjects to take pictures of the things they believe are relevant to our conversation and climate change from their perspective (Harper, 2002). We will offer this method to each interviewee and if they choose to take part they will use our team member's camera. We will limit each interview session to 50 photos total and will walk around with the person as they take pictures.

The personal interviews we conduct while in-country will be the primary source of our information. The information we look to receive are stories that reveal how climate change affects the lives of people in different regions of Albania. By interviewing both experts and laypersons, we will acquire stories that cover both in-depth knowledge of the climate situation in Albania, and the personal stories of people directly impacted. The qualitative information that is received through storytelling adds a level of empathy that may help drive future change. Our interviews will be semi-structured to enable each interviewee to give their perspective. An interview style that will enable the subject a level of control will not only make them feel more

comfortable in sharing personal information, but it will show our sincere interest in the stories they have to share.

### 3.3 Promote Discussions About Climate Impacts in Albania

We aim to create a multilingual visual that promotes conversations on heat wave and flood preparedness strategies among Albanian communities in Tirana and Shkodër. In addition to raising awareness of heat waves and flooding, the deliverables we plan to develop will provide a way to become aware and invested in finding adaptations for the impacts of climate change.

Our primary deliverable will be postcards; they will have pictures taken while in Albania on the front, and on the back, climate stories about local adaptations and perceptions of climate impacts relevant to each region. A pack of 5-6 postcards will be developed for both Tirana and Shkodër. The postcards will be produced both in both English and in Albanian so that they can be shared with a wider range of people.

The selection process for the stories will be based on the intended impact of the stories as a whole. We will be looking for stories that both evoke an emotional response and display evidence of hope for future change. A set of postcards should include stories that give the reader an impression of what it is like to experience the described climate impact. Additionally, the postcards will include an expert's view on the past and future of the environment and an idea of what can be done in the future to adapt to climate changes. To select these stories, we will take extensive notes on the recordings and identify the sections we think are most relevant. Then we will transcribe these sections and compile them to find an underlying theme. A couple specific ways we may go about selecting the stories include paying attention to the emotional response we have to hearing the story, having our member as an observer during the interview to watch the interviewee's body language as they tell the story, as well as matching up stories to the impactful photographs already taken. The photographs selected by our team will be based on their relevance to the stories recorded. These may be portraits of the people telling stories or landscape pictures that display an adaptation or change due to the altering climate.

After making the postcards, we plan to set up a time to meet with our interviewees as a way to share and discuss our deliverable with them. We will plan two meeting times, one for each location, and invite both the locals and the experts to engage in the conversation. This will help interviewees see some of the other climate stories we have collected, and assist in showing locals how GIZ's work assists to promote Albania's climate preparedness. Additionally, it will allow helpful feedback to our group to know the effectiveness of the postcards.

We will provide drafts to our sponsor and advisors for feedback and improvements before we present the final product to GIZ and the WPI Global Lab. In addition, we will reproduce the pictures and captions in a digital form, using an Instagram page we have developed. This Instagram is a collaboration with other IQP groups who are conducting similar Climate Stories projects in other countries such as Iceland, China, and India. Each Instagram post will include a picture and caption that we develop for our postcards. We will share the postcards with our sponsor at GIZ which they can use however they choose. They can also be reproduced on campus to share with the WPI Global Lab. The Instagram will be available to anyone who wishes to follow it, although it will be specifically targeted at people in the United States since the social platform is not as popular in Albania.

By using interviews, research, and observation as a means of interaction with Albanian people, we gain a better understanding of how the climate is degrading. After speaking to our sponsor, we know that Albanian people have begun to make climate adaptations without direct support from the government. Studying methods that locals currently use can help us in capturing the types of changes locals are willing to make.

### Climate Stories

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8																																														
<b>Task</b>																																																						
Observations in Tirana																																																						
Key-Informant Interviews																																																						
Establishing Relationship with Translators																																																						
Local Interviews in Tirana																																																						
Local Observations and Interviews in Shkodër																																																						
Posting on Global Instagram																																																						
Analyzing Interviews																																																						
Postcard Production					D			FD																																														
Discussions with Tirana Residents																																																						
Discussions with Shkodër Residents																																																						
Present to GIZ																																																						
Present to WPI Global Lab																																																						
Final Report			1D				2D		FD																																													
	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13
	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F
	October							November															December																															

Key  
D= Draft  
2D= Second Draft  
FD= Final Draft

## 4.0 References

- 1 million Albanians have been affected by natural disasters. (2018, December 7). Retrieved October 7, 2019 from <https://balkaneu.com/1-million-albanians-have-been-affected-by-natural-disasters/>.
- (2019, August 23). Climate of Albania. Retrieved October 7, 2019 from [https://en.wikipedia.org/wiki/Climate\\_of\\_Albania](https://en.wikipedia.org/wiki/Climate_of_Albania)
- Alamoudi, W., Alvord, N., Aonsamang, P., Knoff, C., Lidwin, J., Ortiz, A.S., Ritta-apinan, A., Sirisuksakulchai, K. (2015). Local Water Network Rectification in Krabi, Thailand. *Worcester Polytechnic Institute*. Retrieved October 6, 2019 from [http://web.cs.wpi.edu/~rek/Projects/Krabi\\_C15.pdf](http://web.cs.wpi.edu/~rek/Projects/Krabi_C15.pdf)
- Albania - Employment in agriculture (% of total employment). (n.d.). Retrieved October 7, 2019 from <https://tradingeconomics.com/albania/employment-in-agriculture-percent-of-total-employment-wb-data.html>.
- Armstrong, A., Krasny, M., & Schuldt, J. (2018). Other psychological theories. In *Communicating Climate Change: A Guide for Educators* (pp. 52-54). Ithaca; London: Cornell University Press. Retrieved October 7, 2019 from <http://www.jstor.org.ezproxy.wpi.edu/stable/10.7591/j.ctv941wjn.12>
- Average Weather in Durrës. (n.d.). Retrieved October 7, 2019 from <https://weatherspark.com/y/84390/Average-Weather-in-Durr%C3%ABs-Albania-Year-Round>
- Average Weather in Shkodër. (n.d.). Retrieved October 7, 2019 from <https://weatherspark.com/y/84405/Average-Weather-in-Shkod%C3%ABr-Albania-Year-Round>
- BalkinInsight [BIRN]. (2018, May 28). Air Pollution Kills 200 in Albania. Retrieved October 7, 2019 from <https://balkaninsight.com/2007/11/02/air-pollution-kills-200-in-albania/>.
- Bardhi, A., Como, E., Dvorani, M., Jaupaj, O., Laska Merkoci, A., & Mustaqi, V. (n.d.). Droughts And Their Impact On The Albanian Territory. Retrieved October 7, 2019 from [http://89.188.43.75/Agricultforest/20130129-01\\_Laska\\_Merkoci\\_et\\_Al.pdf](http://89.188.43.75/Agricultforest/20130129-01_Laska_Merkoci_et_Al.pdf)

- Barriball, K. L., & While, A. (1994). Collecting data using a semi-structured interview: a discussion paper. *Journal of Advanced Nursing*, 19(2), 328–335. doi: 10.1111/j.1365-2648.1994.tb01088.x
- Beebe, J. (2014). Getting the Insiders' Perspective. In *Rapid Qualitative Inquiry: A Field Guide to Team-Based Assessment* (pp. 29–39). Lanham: Rowman & Littlefield.
- Biodiversity in Albania. (n.d.) Centre for Climate Adaptation. Retrieved October 7, 2019 from <https://www.climatechangepost.com/albania/biodiversity/>.
- Climate change in Albania. (n.d.). Centre for Climate Adaptation. Retrieved October 7, 2019 from <https://www.climatechangepost.com/albania/climate-change/>
- Climate Reality Project, The. (n.d.). The Facts About Climate Change and Drought. Retrieved October 7, 2019 from <https://www.climateRealityproject.org/blog/facts-about-climate-change-and-drought>.
- Climate Stories Project. (n.d.). Retrieved October 7, 2019 from <http://www.climateStoriesproject.org/>.
- Davies, Richard. (2016, January 7). Albania – 100s Evacuated After Floods in 5 Counties. Retrieved October 7, 2019 from <http://floodlist.com/europe/albania-floods-january-2016-tirana-dibra-lezha>.
- Dembowski, H., Dombrowski, K., Waweru, S., Nordmann, D. (n.d.). Climate-sensitive flood protection in the Western Balkans set to reduce risks to people, business and environment. Retrieved October 7, 2019 from <https://www.dandc.eu/en/article/climate-sensitive-flood-protection-western-balkans-set-reduce-risks-people-business-and>.
- Dervishi, S., Lacaj, E., & Vathi, R. (2012, October). Urban heat islands (UHI) mitigation in densely urban city of Tirana, Albania: Materials, energy, comfort. Retrieved October 7, 2019 from [https://www.researchgate.net/publication/330456358\\_Urban\\_heat\\_islands\\_UHI\\_mitigation\\_in\\_densely\\_urban\\_city\\_of\\_Tirana\\_Albania\\_Materials\\_energy\\_comfort](https://www.researchgate.net/publication/330456358_Urban_heat_islands_UHI_mitigation_in_densely_urban_city_of_Tirana_Albania_Materials_energy_comfort)
- Dickinson, K.A., Dione D.P.R., St. Pierre, S., Weiss, T.M. (2017, December 15). Reducing Flood Risk in Shkodra through Community Engagement (Undergraduate Interactive Qualifying

- Project No. E-project-121517-080112). Retrieved October 7, 2019 from *Worcester Polytechnic Institute* Electronic Projects Collection: <https://digitalcommons.wpi.edu/iqp-all/887/>
- Diers, M. (2010, December 12). Yes, I am in Albania. Retrieved October 7, 2019 from <http://meredithpeacecorps.blogspot.com/2010/12/>.
- Droughts in Albania. (n.d.). Centre for Climate Adaptation. Retrieved October 7, 2019 from <https://www.climatechangepost.com/albania/droughts/>.
- Energy in Albania. (n.d.). Centre for Climate Adaptation. Retrieved October 7, 2019 from <https://www.climatechangepost.com/albania/energy/>.
- England, L. (2019, August 9). Storytelling is fueling climate conversations at Appalachian State University. *Yale Climate Connections*. Retrieved October 7, 2019 from <https://www.yaleclimateconnections.org/2019/08/storytelling-is-fueling-climate-conversations-at-appalachian-state-university/>
- Environmental Protection Agency, United States [EPA]. (2019, August 27). Heat Island Effect. Retrieved October 7, 2019 from <https://www.epa.gov/heat-islands>.
- European Drought Centre (EDC). (n.d.). Drought of 2007. Retrieved October 7, 2019 from [http://www.geo.uio.no/edc/droughtdb/edr/DroughtEvents/2007\\_Event.php](http://www.geo.uio.no/edc/droughtdb/edr/DroughtEvents/2007_Event.php).
- European Environment Agency [EEA]. (2011, December 9). How is climate changing and how has it changed in the past? Retrieved October 7, 2019 from <https://www.eea.europa.eu/themes/climate/faq/how-is-climate-changing-and-how-has-it-changed-in-the-past>.
- Evans, A. K. (2019, September 25). The way we talk about climate change matters. Retrieved October 7, 2019 from <https://www.boulderweekly.com/news/the-way-we-talk-about-climate-change-matters/>.
- Food and Agriculture Organization of the United Nations [FAO]. (2018). Drought Risk Management Guidelines Western Balkan Region. Retrieved October 7, 2019 from <http://www.fao.org/3/i9148en/i9148EN.pdf>
- Ganz, M. (2016, April 8). The Power of Story in Social Movements. Retrieved October 7, 2019

from <https://dash.harvard.edu/handle/1/27306251>

Deutsche Gesellschaft für Internationale Zusammenarbeit [GIZ]. (2019a, October 1). Albania. Retrieved October 7, 2019 from <https://www.giz.de/en/worldwide/294.html>.

GIZ. (2019b, August 27). Support to Agriculture and Rural Economic Development in Disadvantaged Mountainous Areas. Retrieved October 7, 2019 from <https://www.giz.de/en/worldwide/31116.html>

GIZ. (2019c). Integrated solid waste management. Retrieved October 7, 2019 from <https://www.giz.de/en/worldwide/62845.html>.

GIZ. (2019d). Adaptation to Climate Change through Transboundary Flood Risk Management in the Western Balkans. Retrieved from <https://www.giz.de/en/worldwide/29000.html>.

GIZ. (2015). *The Deutsche Gesellschaft für Internationale Zusammenarbeit (Giz) in Albania*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Retrieved October 7, 2019 from <https://www.giz.de/en/downloads/giz2015-en-portfolio-albanien.pdf>

GIZ. (2012, November 12). Climate Change Adaptation: it's time for decisions now | GIZ. Retrieved October 7, 2019 from <https://www.youtube.com/watch?v=FO46sPwm4xk>.

Gutowski, W., Collins, M., Knutti, R., Arblaster, J., Dufresne, J., Fichet, T., ... Wehner, M. (2013). Long-term Climate Change: Projections, Commitments and Irreversibility. *Climate Change 2013 - The Physical Science Basis* (pp. 1029-1136). New York, NY: Cambridge University Press.

Harper, D. (2002). Talking about pictures: a case for photo elicitation 1(17), 1–14. *Visual Studies*.

Health Foundation, The. (n.d.). The Power of Storytelling. Retrieved October 7, 2019 from <https://www.health.org.uk/newsletter-feature/power-of-storytelling>.

Heatwave Persists, 15 Wildfires Active. (2017, August 8). Exit- Explaining Albania. Retrieved October 7, 2019 from <https://exit.al/en/2017/08/08/heatwave-persists-15-wildfires-active>

International Hydropower Association [IHA]. (n.d.). Albania. Retrieved October 7, 2019 from <https://www.hydropower.org/country-profiles/albania>.

- Johnson, B. B. (1993). Advancing Understanding of Knowledge 's Role in Lay Risk Perception. *RISK: Health, Safety & Environment (1990-2002)*, 4(3), 189–212.
- Kettle, N. P., Dow, K., Tuler, S., Webler, T., Whitehead, J., & Miller, K. M. (2014). Integrating scientific and local knowledge to inform risk-based management approaches for climate adaptation. *Climate Risk Management*, 4-5, 17–31. doi: 10.1016/j.crm.2014.07.001
- Leiserowitz, A., Linden, S. van der, & Maibach, E. W. (November, 2015). Improving Public Engagement With Climate Change: Five "Best Practice" Insights From Psychological Science. Retrieved October 7, 2019 from [https://www.researchgate.net/publication/284160981\\_Improving\\_Public\\_Engagement\\_With\\_Climate\\_Change\\_Five\\_Best\\_Practice\\_Insights\\_From\\_Psychological\\_Science](https://www.researchgate.net/publication/284160981_Improving_Public_Engagement_With_Climate_Change_Five_Best_Practice_Insights_From_Psychological_Science)
- Mansaku, M. (2019, September 12). Personal Communication.
- Mejdini, F. (2018, May 22). Deadly Floods Cause Chaos in Albania. Retrieved October 7, 2019 from <https://balkaninsight.com/2015/11/23/deadly-floods-cause-chaos-in-albania-11-23-2015/>.
- NAP Global Network. (2018, February). Albania National Adaptation Plan Approach. Retrieved October 7, 2019 from <http://nappglobalnetwork.org/wp-content/uploads/2018/02/Albania-NAP-process-country-poster-Feb2018.pdf>
- National Geographic. (2019, February 4). Global Warming Effects. Retrieved October 7, 2019 from <https://www.nationalgeographic.com/environment/global-warming/global-warming-effects/>.
- National Space and Aeronautics Administration [NASA]. (2019a, July 9). Scientific Consensus: Earth's Climate is Warming. Retrieved October 7, 2019 from <https://climate.nasa.gov/scientific-consensus/>
- NASA. (2019b, July 9). The Effects of Climate Change. National Aeronautics and Space Administration. Retrieved October 7, 2019 from <https://climate.nasa.gov/effects/>.

National Oceanic and Atmospheric Administration [NOAA]. (n.d.). Climate Model Simulations of the Last 1,000 Years. National Centers for Environmental Information. Retrieved October 7, 2019 from <https://www.ncdc.noaa.gov/global-warming/last-1000-years>

Our Climate Voices. (n.d.). Retrieved October 7, 2019 from <http://www.ourclimatevoices.org/>.

Physical map of Albania. Albania physical map. (n.d.). Retrieved October 7, 2019 from <http://www.vidiani.com/physical-map-of-albania/>.

Porja, T. (2013). Heat Waves Affecting Weather and Climate over Albania. *Journal of Earth Science & Climatic Change*, 04(04). doi: 10.4172/2157-7617.1000149

Prifti, P. J., & Biberaj, E. (2019). Encyclopedia Britannica. In *Encyclopedia Britannica*. Retrieved October 7, 2019 from <https://www.britannica.com/place/Albania>

Republic of Albania Ministry of Environment, Forestry and Water Administration. (2009, November). *Albania's Second National Communication to the Conference of Parties under the United Nations Framework Convention on Climate Change*. Retrieved October 7, 2019 from <https://unfccc.int/resource/docs/natc/albnc2.pdf>

Republic Of Albania Ministry Of Health. (AD). (n.d.) Protecting Health From Climate Change In Albania . Vulnerability Assessment Report.

Reymann, B (Photographer). (2019, April 19). Mandi, India [digital image]

River floods in Albania. (n.d.). Centre for Climate Adaptation. Retrieved October 7, 2019 from <https://www.climatechangepost.com/albania/river-floods/>.

Rose, G. (2016). Making Images as Research Data: Photo-documentation and Photo-elicitation. *Visual Methodologies: An Introduction to Researching with Visual Materials*. (pp. 310-329). London: SAGE Publications Ltd.

Scannell, L., & Gifford, R. (2011). Personally Relevant Climate Change. *Environment and Behavior*, 45(1), 60–85. doi: 10.1177/0013916511421196

Seidman, I. (2019). Why Interview? *Interviewing as qualitative research: a guide for researchers in education and the social sciences*. (4th ed.). New York, NY: Teachers College Press.

- Size of Albania compared to Italy. (n.d.). Retrieved October 7, 2019 from <https://www.mylifeelsewhere.com/country-size-comparison/albania/italy>
- Shkodër in the aftermath of the 2010 floods (2019). Retrieved October 7, 2019 from: [en.wikipedia.org/wiki/2009%E2%80%9310\\_Albania\\_floods](en.wikipedia.org/wiki/2009%E2%80%9310_Albania_floods)
- Staedter, T. (2005, October 17). Warmer Climate Produces Less Rain. Retrieved October 7, 2019 from <https://www.scientificamerican.com/article/warmer-climate-produces-l/>.
- Stoknes, E. (2017, September). How to Transform Apocalypse Fatigue into Action on Global Warming. Retrieved October 7, 2019 from [https://www.ted.com/talks/per\\_espen\\_stoknes\\_how\\_to\\_transform\\_apocalypse\\_fatigue\\_into\\_action\\_on\\_global\\_warming?language=en](https://www.ted.com/talks/per_espen_stoknes_how_to_transform_apocalypse_fatigue_into_action_on_global_warming?language=en)
- Taylor, A. E. (2019, January 22). Tirana Ranks Among Most Polluted Cities in the World. Exit-Explaining Albania. Retrieved October 7, 2019 from <https://exit.al/en/2019/01/22/tirana-ranks-among-most-polluted-cities-in-the-world/>
- Tirana Ranks Among Most Polluted Cities in the World - Exit - Explaining Albania. (2019, January 22). Retrieved October 7, 2019 from <https://exit.al/en/2019/01/22/tirana-ranks-among-most-polluted-cities-in-the-world/>.
- Trends in annual temperature & precipitation: 1960-2014: GRID-Arendal (2019). Retrieved October 7, 2019 from <http://www.grida.no/resources/7076>.
- United Nations Development Programme [UNDP]. (2018). Gender Mainstreaming into Albanian Climate Change Policies. Gender Mainstreaming into Albanian Climate Change Policies (pp. 1–18). Retrieved October 7, 2019 from <http://www.un-gsp.org/sites/default/files/documents/3alban1.ppt.pdf>
- United States Agency for International Development [USAID]. (June, 2016). Climate Change Risk Profile Albania. (pp. 1–3). Retrieved October 7, 2019 from <https://www.climatelinks.org/sites/default/files/asset/document/2016%20CRM%20Fact%20Sheet%20-%20Albania%20%28003%29.pdf>
- Walsh, A. (2016, October 26). Why is storytelling so important to the world? It's our TRUTH. Retrieved October 7, 2019 from <https://medium.com/age-of-awareness/the-truth-of-stories-why-do-we-tell-tales-f262f84650d8>

Woodcock, S. (2016). Life is war: surviving dictatorship in communist Albania. Place of publication not identified: Hammeron Press.

Words Alive. (2018, September 5). The History of Storytelling. Retrieved October 7, 2019 from <http://www.wordsalive.org/blog/2018/9/5/the-history-of-storytelling>.

World Bank. (2011). Albania Climate Change and Agriculture. Retrieved October 7, 2019 from <http://siteresources.worldbank.org/ECAEXT/Resources/258598-1277305872360/7190152-1303416376314/AlbaniaupdateCountryNote-final.pdf>

Worst floods in 100 years hit Serbia, Bosnia, Albania, Greece and Montenegro. (2010, December 6). Retrieved October 7, 2019 from <https://www.telegraph.co.uk/news/picturegalleries/worldnews/8184713/Worst-floods-in-100-years-hit-Serbia-Bosnia-Albania-Greece-and-Montenegro.html?image=12>.

# Appendix

## Appendix A. Interview Questions for Experts

- What is your area of expertise?
  - How long have you been working in this area?
  - What changes have you observed over your time working in this area?
  - Do you have any concerns for the future in this area?
- What major weather events have occurred recently in Albania?
  - How have these weather events displayed change
  - Have you observed any specific adaptations people have made to combat these changes?
- Where did you grow up?
  - How is growing up in Albania today different than when you were a child?
- Part of our project is collecting personal stories about climate change. Can you describe an instance where you noticed climate change directly affecting your everyday life?
- Do you know of any local communities who would be interested in speaking to us?

## Appendix B. Interview Questions for Albanian Residents

- General
  - What is your name?
  - Where have you lived most of your life?
  - What have you done for a living?
  - What types of outdoor activities/sports did you do as a child?
    - Could you tell us a story about a specific activity?
    - How is growing up in Albania today different than when you were a child?
  - What is your favorite activity to do outside? Or what activity do you spend the most time doing while outside?
    - Have you noticed any changes surrounding this activity over time?
  - What parts of your life are most affected by weather?
    - How so?
    - What changes have you observed?
- Shkodër specific
  - Have you or anyone you know ever had a flood in your house?
  - Based on your past experiences with flooding is there any actions you now do differently?
  - Describe something meaningful to you in your environment or community, or in the place where you grew up, that has changed due to floods.
- Tirana specific
  - On hot days, what do you do to cool off?
  - How has your experience with heat waves changed over time?
  - How do heat waves make it harder to care for children or the elderly?
  - Do you ever experience droughts or water shortages?
  - Describe something meaningful to you in your environment or community, or in the place where you grew up, that has changed due to heat.

## Appendix C: Informed Consent Script

We are a group of students from Worcester Polytechnic Institute in the United States. We are conducting interviews on behalf of our sponsor Deutsche Gesellschaft für Internationale

Zusammenarbeit (GIZ) throughout the areas of Shkodër and Tirana Albania. The goal of our project is to collect the climate stories of your communities in Albania in order to assist GIZ in facilitating discussions among your Albanian communities as you adapt to heat waves and flooding as a result of climate change. Your participation in this task is completely voluntary and you may opt-out at any time. Please remember that your answers will remain confidential unless your consent has been given. With your consent, we would like to audio record this interview. If you consent, we may quote your interview transcript in our final report, in the postcards we develop, on the ClimateStoriesProject.org website, and on a social media page. Your participation is greatly appreciated. Please inform us if you have any current concerns about how your responses will be used. We will not identify you in any published information unless you consent. Please let us know when you are ready to begin the interview. If you have any concerns after the interview about how your responses will be used you can contact us at [gr-giz-b19@wpi.edu](mailto:gr-giz-b19@wpi.edu) with any concerns.

# Appendix D: Release Form



## Worcester Polytechnic Institute’s Albanian Project Center: Analyzing Local Attitudes and Experiences with Climate Impacts Release Form

Full Name of Person Interviewed:  
(Print) \_\_\_\_\_

Address \_\_\_\_\_

Phone: ( ) \_\_\_\_\_

Place of Interview \_\_\_\_\_

Date \_\_\_\_\_

Name of Interviewer and Institution

Mark Bray, Kayla Legatt, Madison Perry, and Bella Speer WPI

I understand this this interview and any photographs, audio recording are part of scholarly research by the individual and institution named above. I give permission for the following: (check all that apply):

- May be used for educational research purposes at the above institution.
- May include my name.
- May be included in a WPI publication or exhibit.
- May be included in another educational, non-profit publication, or exhibit.
- May be included on a social media network page.
- May be used as part of postcard documentation.
- May be used but DO NOT include my name.
- May be photographed.
- Other (explain)

\_\_\_\_\_  
Signature of Interviewee

\_\_\_\_\_  
Date

## Appendix E. Shooting Script

- Tirana specific
  - What methods are people currently using to combat the heat?
  - How do people feel about the heat?
  - What clothing adjustments have been made due to the heat?
  - How has agriculture been impacted by the heat?
- Shkodër specific
  - What methods do people currently use when flooding occurs?
  - How has agriculture been impacted by the flooding in rural areas?
  - How do people feel about the flooding occurrences?
  - What do you think of when you see flooding?
  - How has agriculture been impacted by the flooding in rural areas?