

**Climate Change Intervention:
Recommendations to Develop Justice and Power**

by

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A Thesis

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This thesis is dedicated to the affected indigenous, marginalized, and refugee populations throughout the world. Climate change has affected us all in some way, but no more so than within your communities. Thank you for your stories, which deserve to be heard and for sharing your struggles when I have had the opportunity to be in touch with you. I am working for justice on your behalf, which you deserve above all.

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Abstract

This research addresses the inequitable causes and consequences of climate change for subsistence farmers in the developing world. These inequities exist as developing nations and impoverished agricultural communities contribute the least to global climate change yet are facing the most severe consequences. Development agencies play an important role in helping affected communities address the consequences of climate change, yet the interventions often do not consider the specific needs of those they seek to help. Furthermore, some interventions and approaches can exacerbate climate change-related inequities by operating through ideological principles that miscalculate or do not address the sources of inequity. To address these issues, this research focuses on ways to promote justice and enhance community participation in development agency interventions. It explores and explains principles that must be kept in mind so that climate-related injustices among subsistence agricultural communities can be addressed and not reproduced. Through a review of development literature and thematic analysis, this research finds that by utilizing community knowledge and encouraging participation, justice can be achieved on behalf of the affected populations through resources provided by development agencies.

Keywords: adaptation, climate change, development, ideology, justice, power, subsistence agriculture, vulnerability

Chapter One

Introduction

The effects of global climate change have become an extreme and omnipresent threat. There is not a person on Earth who has not been or will not be affected by global climate change. The continued emissions of greenhouse gases into the atmosphere has led to unpredictable weather patterns such as drought, floods, forest fires, and extreme changes in temperature everywhere on the globe, that have caused sea levels to rise and have permanently damaged the stability of ecosystems. The environmental effects of global climate change have affected the ability of human societies to function as they always have under stable climate conditions. As a result, some livelihoods can no longer be maintained, and many human societies are now in a position in which they must adapt to the realities of climate change. Nowhere is this truer than in developing nations where large segments of the population live in poverty and rely on subsistence farming to survive.

As the scientific understanding of the realities of climate change has become clearer, methods of dealing with its effects are being developed and implemented. However, due to the varied nature of the effects of climate change, it is impossible to create a singular solution to the issue on a global scale. This means that the effects of climate change must be studied, understood, and confronted on a case-by-case basis that account for specific regional needs. Subsistence farming communities in the developing world who rely on local food for food security have been devising their own methods for dealing with local and regional climatic effects for decades now. Methods of confronting the effects of climate change include new irrigation practices and augmentation of traditional farming equipment, but when these systems fail many populations must migrate to sustain their livelihoods. The inability of these

communities to adapt is particularly troubling, however, because despite contributing the least to emissions that have led to global climate change, they are burdened most heavily by its effects. Recognition of this inequity demands that agencies focused on the effects of global climate change and development intervene on behalf of these communities.

The work of development agencies focused on the effects of climate change for subsistence farmers in the developing world is as varied as the effects themselves. Some may, for example, focus on developing interventions that provide food security in the form of raw materials, advanced farming techniques, or by providing knowledge. Meanwhile, others attempt to implement systems that increase the income within a community by establishing markets, supporting small businesses, or providing investment opportunities. While these may be systems that can provide much-needed support for a struggling community, they fall short of the greater goal of overcoming the ongoing and invasive threat of the causes and effects of global climate change. If development agencies are to intervene with the intent of confronting global climate change, then they must confront the causes as well as the effects to achieve equity on behalf of the affected communities.

In order to determine more equitable solutions that confront the causes and consequences of global climate change for subsistence farming communities in the developing world, it is the purpose of this research to determine principles that address climate change-related inequities and limit the possibility of their being reproduced. It does this by exploring literature on climate-related inequities that exist as well as their causes, adaptation methods undertaken by the affected communities themselves, and through examining the shortcomings of previous development agency interventions. Following this investigation, recommendations are made for future interventions and policies that address the effects of climate change in the developing

world. This will aid in advancing justice on behalf of the affected communities by providing insights on principles to increase their participation in decision-making processes, ensure equitable solutions are developed, and identify and adapt development agency ideologies that do not serve the interests of the communities.

This thesis' chapters are organized to convey the problems and proposed solutions to the inequitable causes and consequences of the effects of global climate change faced by subsistence farming communities in the developing world. In Chapter Two, I explain the background and significance of the social problem this thesis addresses, which is the inequitable causes and consequences of climate change, particularly for subsistence farming communities in the developing world. The chapter concludes by explaining the research questions this research addresses. Chapter Three presents the methodology and methods used to answer the research questions, including an explanation of which data were needed and how they were acquired and analyzed. Chapter Four presents the results that have been derived from the data to answer the research questions. Chapter Four also analyzes these results to provide recommendations and contributions to development agency interventions that seek to achieve equity for subsistence farming communities. Finally, Chapter Five concludes this research; it summarizes the information contained within the previous chapters and offers suggestions for future work and research opportunities that address the inequitable effects of climate change for subsistence farming communities in the developing world.

Chapter Two

Background and Significance

Introduction

Global climate change has and will continue to pose serious social and economic problems with unique effects on a variety of activities and societies. Among those affected are subsistence farmers in the developing world who are particularly vulnerable and must respond to the consequences of climate change to confront its effects and maintain their livelihoods. The consequences of climate change for subsistence farming communities are diverse and affect each community differently, but they often exist in the form of environmental degradation causing a litany of social issues including violence, resource mismanagement, and power imbalances. It is, therefore, the goal of this research to determine how interventions proposed by development agencies might address the inequitable causes and consequences of climate change for subsistence farming communities in the developing world. This thesis research does this by establishing key concepts and principles for action related to development, the purpose of which are to address inequities related to climate change. This will be done by reviewing development-related literature on inequities so that we may understand how to approach development to enhance justice and participation in subsistence farming communities affected by the inequitable causes of climate change.

This chapter first identifies climate change as a social problem, which has uneven and inequitable consequences for the developing world. This is followed by a discussion of these consequences, their causes, potential concepts and approaches to development that focus on overcoming the inequities they cause. For the purposes of this research, questions related to the

inequitable consequences of climate change have been formulated using the concepts of justice, power, and ideology. These concepts are defined in this chapter as lenses through which to consider the approaches of development agencies and their interventions. The chapter concludes with an overall research question, constitutive research questions, and a research statement which establishes the intent of this research.

Social Problem

This section introduces the social problem this research addresses: the inequitable causes and consequences of climate change, particularly for subsistence farming communities in the developing world. To achieve this, it first explains the inequitable consequences of climate change which include extreme and unpredictable weather patterns, food insecurity, and conflict. Considering how climate change is caused, defined, and understood when determining which interventions may redress short and long-term consequences of climate change is essential for the equitable interventions that address these consequences in the developing world. The chapter then focuses on the uneven distribution of the consequences of climate change and the impacts it has on the developing world.

The definition of climate change and its consequences vary based on ideological orientation and understanding. However, for the purposes of this research the definition of climate change comes from United Nations Framework Convention on Climate Change, which defines climate change as, “a change of climate that is attributed directly or indirectly to human activity, that alters the composition of the global atmosphere, and that is in addition to natural climate variability over comparable time periods” (United Nations 1992, 3). Furthermore,

climate change is being driven by the release of greenhouse gases into the atmosphere, which are produced by both natural and anthropogenic sources (United Nations 1992). However, it is critical to understand that most greenhouse gases that are the result of human activity come from industrialized nations.

The disproportional release of greenhouse gases coming from industrialized nations has created inequitable consequences for vulnerable subsistence communities throughout the world. Lipper et al. (2014) point out that nations that have contributed the least to the causes of climate change are the most affected by its consequences. In addition, industrial activity is on the rise as nations become wealthier, exacerbating climate change, and putting a further strain on resources that are crucial for the livelihoods of subsistence farming communities. In fact, Springmann et al. (2018) argue that humanity may surpass its capabilities for global fresh water, land use, and ocean acidification, “if socioeconomic changes towards Western consumption patterns continue.” To confront the inequity created by the release of greenhouse gases by industrialized nations, this research determines how justice and participation can be enhanced through development interventions.

The global scale of climate change presents a significant challenge for development agencies focused on its consequences. Further complicating the issue, however, is the variety of problems caused by climate change. Firstly, there is the issue of increased temperatures and more extreme rainfall, potentially affecting food security and nutrition (Myers et al. 2017). It is expected the extreme events including drought, heavy rainfall, flooding, and the intensity of extreme temperatures will occur more frequently and increase in intensity (Lipper et al. 2014). Each of these events has the potential to affect food security and nutrition. Climate change is already leading to limited food access and creating conflicts within communities and throughout

vulnerable regions (Myers et al. 2017; Niles and Salerno 2018). The consequences faced by vulnerable communities are severe, but the widespread distribution of these disparities is significant and problematic as well. For instance, Niles and Salerno (2018) argue that increased climate shocks will particularly affect those in low-income countries. The dichotomy of responsibility and vulnerability to the adverse effects of climate change is widely seen as unjust, implying obligations for highly responsible nations (Füssel 2010).

Given that industrialized nations are the leading producers of greenhouse gases that contribute to climate change and that poorer nations are most vulnerable, we must determine the principles to apply to development interventions that take these fundamental inequities into account in order to adequately address the social problem of climate-related inequities in subsistence agriculture. Agencies focused on the consequences of climate change and development are attempting to address these issues of inequity in the developing world, so we must a look at how climate change is defined and understood by development agencies, in terms of its immediate threat to the livelihood of subsistence communities, in order to determine their capability for addressing inequities. For the purposes of this research, the developing world consists of those regions where agricultural growth and adaptation for food security and economic growth are a priority (Lipper et al. 2014). Also, due to reliance on agricultural production, climate change has had uneven and inequitable consequences on these developing communities. In the developing world, agriculture remains the most important source of income and 75% of the world's poor live in rural areas within these nations (Lipper et al. 2014). This makes climate change the most immediate issue affecting subsistence farming communities in the developing world, the inequitable causes of which are the social problem this research addresses.

By discussing subsistence farmers and farming communities, I am referring to those who pursue agricultural livelihoods for both subsistence and commodity production. Bryceson (2018) describes subsistence livelihoods as those that, “function as a unit of production, consumption, reproduction, welfare and risk-spreading in the context of small rural community settings.” The distribution of risk and the reliance on communal welfare is what makes their livelihoods so vulnerable to the consequences of climate change. Additionally, it underscores the inequity of the situation because although subsistence communities have contributed least to the causes of climate change, they remain one of the most vulnerable to its effects. The dependency on local production means that uncertain changes in climate put regions with low adaptive capacity at risk of decreased food security and increased conflict (Mpandeli 2018). This is due to the shared risk assumed by all members of a subsistence community.

When speaking of subsistence communities, there are concepts of importance related to development that help identify and address the consequences of climate change. Vulnerability and adaptation, for instance, are particularly important to the discussion surrounding what subsistence farming communities and vulnerable communities must do to adapt to climate changes to overcome the issues they face. Vulnerability refers to the “extent to which a natural or social system is prone to damage” (Perez et al. 2015, 96). Adaptation, meanwhile, refers to the “individual or collective action that is ultimately intended to affect exposed units in response to expected or experienced climate change stimuli” (Oberlack and Eisenack 2017, 528). Myers et al. (2017) argue that adaptation to climate shocks has a high potential for mitigating losses in agricultural production. Achieving this would significantly reduce the level of vulnerability of subsistence farming communities and is a concept development agencies often seek to achieve in their formulation and implementation of development interventions.

To achieve the ability to adapt, however, barriers to confronting climate change must first be identified. Unfortunately, there is not a universally accepted method for understanding and evaluating the consequences of climate change for subsistence farming communities and converting adaptation plans into action has been terribly slow (Khatri-Chhetri et al. 2019). Barriers to adaptation are often pointed to include, “economic, institutional, behavioural, or organizational factors,” however, others are more complex (Long et al. 2019, 993). The gap in knowledge that exists is a result of the varied effects of climate change and the need for locally acceptable solutions for local communities (Lipper et al. 2014).

Understanding how important adaptation is for enhancing the livelihoods of subsistence farming communities facing the consequences of climate change should help explain why development organizations are focused on achieving that goal. Adaptation underscores the necessity for development organizations to identify and create the tools necessary to evaluate adaptation potential (Lipper et al. 2014). This is a process that requires careful thought and it is the purpose of this research to enhance the potential for communities to adapt by establishing equitable principles for development. The following section will discuss development and development organizations, along with introducing the research problem of this thesis and the key analytical criteria for this research.

Development Organizations and Interventions

There is a long history of development agencies and interventions and analysis of these. For the purposes of this research, I focus on development interventions proposed by development agencies that address the inequitable causes and consequences of global climate change. In this section, I define development, introduce the work of development organizations, and discuss a

wide range of development interventions that are pursued in the context of climate change. This discussion will also define and identify the communities that development agencies have chosen to focus on for the purposes of their interventions.

Development, as used in this research, refers specifically to the ecological and social interventions undertaken by agencies to address issues of inequity created by climate change in the developing world. This definition is based on the concepts used in the United Nations Sustainable Development Goals released in 2015 which focus on the environment and the use of sustainable methods to reduce inequalities (Smith 2020). When viewed together, these seventeen goals build upon the Millennium Development Goals which had a greater focus on social inequities by encouraging ecological resilience. These goals, however, are not without critics, specifically in the methodologies used in their achievement. For instance, it has been argued that, “sustainable development is a social movement for greater commodification” (Luke 2005, 233). These issues are addressed in this research by making recommendations to achieve equity in development projects and interventions.

The development interventions this research is concerned with devise methods and implement programs that work to reduce the effects of climate change for vulnerable populations worldwide. Niles and Salerno (2018) show that the goals of such organizations are often focused on eradicating poverty and food insecurity created by climate change. Furthermore, as with the importance of identifying barriers to adaptation, organizations must also develop methods for identifying the most vulnerable populations. There is a need to develop indicators of vulnerability and adaptation to climate hazards (Brooks et al. 2004). Doing so may provide an understanding for how to develop interventions that are more equitable and successful at reaching their target population (Brooks et al. 2004).

Examining how farmers have adapted to previous climate shocks is crucial to future development goals. For instance, development agencies have begun to make farmer adaptation a focus of policy development and implementation (Niles and Salerno 2018). This approach helps organizations understand climate change vulnerabilities and the potential for resiliency, which is the ability to achieve and maintain adaptive capacities (Perez et al. 2015). The primary distinction of resilience planning is that it does not seek to overcome the consequences of climate change. Rather, resilience planning prepares to live within climatic changes as opposed to resisting them (Perez et al. 2015).

Development organizations focused on climate change are forming partnerships with one another and developing strategies with affected communities to mitigate consequences. Dey et al. (2019) outline ways in which innovation, largely in response to climate change, can lend itself to poverty alleviation. New innovations and technologies are being created in response to climate change, many of which are being developed by communities. For instance, sustainable entrepreneurship creates, “future goods and services that sustain the natural and/or communal environment” (Long et al. 2018). Once these innovations are made there are several ways development agencies implement them into development strategies. This is possible because development organizations have the resources to augment technologies to maximize efficiency and make them adaptable to communities facing similar climatic effects (Dey et al. 2019). As a result of the ingenuity of affected peoples, interventions themselves have been adapted by development organizations to draw on the knowledge and capabilities of those within affected communities.

As affected communities engage with development organizations, there is an opportunity for communities to determine their own course of action in response to changes in climate. How

this is done is a primary focus of this research. The following section elaborates the research problem that the research addresses, which is how development agencies can create equitable intervention policies for subsistence agriculture communities in the developing world. It also introduces concepts needed to understand and address this research problem.

Research Problem: Concepts for Equitable Development Intervention

The purpose of this analysis is to determine what conceptual approaches are currently being pursued and what practices and principles need to be applied to future development interventions so that injustices can be addressed and not reproduced. In my approach to this problem, I focus on the analysis of principles for development interventions by utilizing the concepts of justice, power and participation, and ideology. In this research, I examine how each of these concepts informs and contributes to the development of equitable interventions for subsistence farming communities in the developing world. As I will explain in the following subsections, these concepts are ideal areas on which to focus because they place the emphasis of development intervention on equitably improving livelihoods and increasing adaptive capacities. Also, by focusing on these concepts, agencies can simultaneously address both causes the consequences of global climate change.

Justice

A straightforward explanation of the concept of justice is providing people with what they are due (Swift 2019). Given this definition, injustice would therefore mean to deny people to that which they are entitled. For the purposes of this research, in relation to the consequences of climate change, justice is the ability of interventions to address the consequences of climate

change to which, as has been discussed, subsistence farming communities have not been the primary contributors. Following this understanding of justice, it should then be the role of development interventions to provide communities with the opportunity to adapt to consequences of climate change while empowering them to enhance their own livelihoods and to address the actions that cause climate change in the first place. Unfortunately, the implementation of justice-based interventions has been rather slow (Khatri-Chhetri et al. 2019). This is partially due to the logistical issues of reaching and accounting for diverse and remote populations. However, incorporating stakeholder inputs has only recently become a priority in the adaptation plans and programs meant to address the challenges of climate change. Khatri-Chhetri et al. (2019) argue that more needs to be achieved on behalf of vulnerable communities to include a diversity of stakeholders, knowledge, technologies, and practices.

Power

Dey et al. (2019, 89) argue that power is related to autonomy and define it as the “freedom to make informed decisions.” If development organizations seek to achieve equitable outcomes, it should be the goal of development interventions to increase the decision-making power within affected communities. One means of achieving this is through providing opportunities for participation in development projects. Zurba et al. (2019) argue for the importance of participation by stating that it enhances knowledge and facilitates dialogue between stakeholders and communities.

Within development programs, there are a variety of responses and solutions to the consequences of climate change for subsistence farming communities that are intended to increase the power of local communities. These include interventions and programs such as

sustainable entrepreneurship, which addresses multiples Sustainable Development Goals (Long et al. 2018). Dey et al. (2019) show how implementing these programs can increase local innovation, as well as provide opportunities for investment and enterprise. Also, climate-smart agriculture is an intervention platform that integrates climate change into plans for land and resource management (Lipper et al. 2014).

It is the purpose of this research to analyze the ability of interventions such as these to determine their ability to address issues related to power. The impacts of global climate changes caused by industrial nations have made it crucial that subsistence communities are able to make the decisions that are right for them, reflect their cultural values, and address their unique climatic circumstances.

Ideology

The role of ideology in development interventions is rarely discussed but still plays a significant part in creating intervention strategies. Ideology, defined by Bennett et al. (2005), is a construct that is used to form a set of principles that guide actions. Ideological principles, in terms of development, have been viewed as a barrier to intervention due to uncertainties, competing priorities, and zero-sum games (Oberlack and Eisenack 2018). For example, certain ideologies view “climate change” as an “ideologically charged phrase” (Brace and Geoghegan 2011, 284). This view has led to limited action and discounts the causes that are coming from activities that emit greenhouse gases in industrialized nations.

The purpose of focusing on ideology in the context of development intervention is to understand how ideology conditions the achievement of justice and power. For instance, since solutions are developed in response to the consequences a development agency sees as most

crucial, ideological prioritization can play a significant, and at times contradictory role, in development intervention. Ideologies may inform or prioritize a variety of interventions that focus on issues such as food security, preventing conflict, eradicating poverty, or encouraging economic growth. While addressing these issues helps to confront the consequences of climate change, they may not be the priority concern of the affected community. This is one example as to how ideology can inhibit the roles of justice and participation in development interventions.

Overall, this research looks at the role each of these concepts plays in the development of intervention policies. The following section establishes the research questions that need to be asked to address the issue of how development agencies might go about addressing injustices that are the result of climate change. These questions are focused on the key concepts of justice, power, and ideology that have been discussed in this section.

Research Questions

This section introduces my overall research question and constitutive research questions needed to answer the overall research question.

Overall Research Question

As interventions are being developed to address the inequitable causes and consequences of climate change for subsistence farmers in the developing world, what principles must development agencies keep in mind so that injustices can be addressed and not reproduced?

Constitutive Research Questions

Constitutive Research Question 1 asks, how can we apply concepts of justice to development interventions focused on the consequences of climate change for subsistence farmers in the developing world? The purpose of this question is to determine how development agencies define and identify issues related to justice. Doing this will make it possible to see what types of interventions can achieve equitable results and why.

Constitutive Research Question 2 asks, how might interventions focused on global climate change impacts on subsistence farming communities created by development agencies address systemic issues of participation and power? This question intends to discover whether climate interventions are utilizing community resources and knowledge and if they are reflective of local needs by incorporating local decision-makers in their intervention planning.

Finally, Constitutive Research Question 3 asks, how have ideologies framed development interventions focused on the consequences of climate change for subsistence farming communities in the developing world? This question is asked to determine the effect ideologies have been used in intervention planning and whether those ideologies are reflective of issues related to justice and power as defined in this research.

Research Statement

This research addresses the problem of inequitable causes and consequences of climate change because I want to know how the problems faced by subsistence farming communities in the developing world might be addressed by development interventions in a way that enhances justice for and participation of the affected communities.

Summary

The significance of climate change for subsistence farmers in the developing world cannot be overstated. If the issues they are facing are to be adequately addressed with the purpose of achieving equitable solutions, these questions must be asked. In the following section, I will explain my methodology for reviewing literature and projects related to climate change in the developing world.

Chapter Three

Methodology and Methods

Introduction

This chapter explains the methodology and methods that guided this research. It explains how data were utilized to answer the overall research question, as interventions are being developed to address the inequitable causes and consequences of climate change for subsistence farmers in the developing world, what principles must development agencies keep in mind so that injustices can be addressed and not reproduced? To do so, I first explain my methodologies which include critical inquiry, literature review, and thematic analysis; this is followed by an explanation of my positionality. In the section that follows, I explain the methods used to answer each of my constitutive research questions and why I chose them as the best methods to provide answers and understanding.

Methodology

This section explains the methodologies that have guided this research, which include critical inquiry, a literature review, and thematic analysis. I then explain my positionality.

Critical Inquiry

Critical inquiry is meant to question the social conditions and actors that allowed a set of circumstances to arise to fully contextualize a social issue and to understand its sources and then address it (Comstock 1994). For the purposes of this research, critical inquiry was applied to analyze and understand how subsistence farming communities are affected and what principles for development can be recommended in order to address the inequities associated with climate

change that they experience. Therefore, within the context of this research critical inquiry was utilized to focus on the concepts of justice, power, and ideology. As this research shows, these concepts are critical in the formation of development interventions that seek to equitably address the causes and consequences of global climate change for subsistence farming communities.

Literature Review

Literature review is a means of becoming familiar with a topic. However, it is more than scanning relevant material. Hart (2018) defines literature review as a method of engaging with literature systematically so that it is possible to formulate methodological approaches that will make answering a research question possible. In this research, literature related to development agencies focused on climate change was reviewed. Since the focus of this research is to establish equitable principles for intervention strategies for the purposes of development, a literature review is used to develop an understanding of how equity can be achieved in the context of the concepts of justice, power, and ideology. Having knowledge of these concepts is vital to the formation of equitable development intervention to determine how each can be applied to future intervention strategies. This understanding can then be applied to develop equitable intervention strategies focusing on subsistence farming communities to address the specific issues related to climate change they are facing.

Thematic Analysis

Thematic analysis is used to search for patterns within data (Saldaña 2016). It is useful to answer these research questions because it identifies themes and overlapping approaches contained in the literature that address issues presented by climate change and development

intervention. When analyzing how concepts are defined in development literature, it is helpful to identify themes across regions and cultures. Doing so would allow development agencies to establish improved understandings for how to respond to the consequences of climate change and lead to the development of a uniform response to climatic shocks (Niles and Salerno 2018). Analyzing themes also helps determine the ideologies that inform development intervention. This is vital to creating equitable solutions because it helps to identify the intent and purpose of any development strategy.

Positionality

My concern for these issues is a result of my experiences working with subsistence farmers from the developing world. Knowing their stories has led to my desire to further understand the difficulties they are facing and to perhaps suggest methods that can improve their situation.

Methods

Methods for answering the question of how to address the inequitable causes and consequences of climate change begins with an inductive approach of literature. This section describes the methods that have been used to collect and analyze data necessary to answer the research questions. It describes the sources of the data and the units of analysis for each question and the techniques used to organize and analyze the data to answer each question. Methods for each question are explained in turn.

Research Question One

Constitutive Research Question One asks, how can we apply concepts of justice to development interventions focused on the consequences of climate change for subsistence farmers in the developing world? The data necessary to answer this question are literature on justice in the context of climate change and development. Data sources used were gathered by searching for reports on project development focused on climate change and academic articles on justice in the context of global climate change and development interventions. Data sources were found through searches in online academic databases and reports from organizations focused on the causes and consequences of climate change.

Concepts related to development interventions focused on the unjust causes and consequences of climate change served as the primary unit of analysis for this question. Organizational projects and goals and texts on solutions to global climate change were also analyzed in addressing this question. The literature review was conducted to determine how justice is applied to the formation of development interventions and how the injustices that exist because of global climate change are being addressed.

Data were analyzed thematically to determine principles that advanced the concept of justice in development interventions. An inductive approach was used to categorize and analyze data. An inductive approach is data-driven, allowing for categories or codes to be developed after engaging with the broader theme of the research question (Boreus and Bergstrom 2017). Within this thesis research, I categorized the data from the literature to help provide an answer to my constitutive and overall research question. This was essential for this type question because it required seeing how different agencies define and interpret the data and then inductively categorizing their varying interpretations relative to the social problem.

Research Question Two

Constitutive Research Question Two asks, how might interventions focused on global climate change impacts on subsistence farming communities created by development agencies address systemic issues of participation and power?

Methods for data collection were the same for Research Questions Two as they were for Research Question One. The scale of the research remains focused on developing nations, the units of observation remain the same, and the data were gathered from similar sources and analyzed using similar methods. However, data organization and analysis changed, particularly as they pertained to the primary unit of analysis contained within the question.

The unit of analysis for Constitutive Research Question Two focused on power and participation as these concepts are defined in the previous chapter. An analysis of these data was conducted in the form of a literature review to determine how and if interventions to global climate change discussed in the literature address issues of participation and power as defined in Chapter Two. The results of this question were organized to summarize data gathered from the literature using the inductive methods discussed for Research Question One. The analysis of these results was organized to explain methods for implementing the concepts of participation and power into future development interventions.

Research Question Three

Constitutive Research Question Three asks, how have ideologies framed development interventions focused on the consequences of climate change for subsistence farming communities in the developing world?

This question focuses on ideology as its unit of analysis. To answer this question a literature review was conducted with a thematic analysis to create categories that contribute to an understanding of how development agencies choose where to intervene and why they implement the specific interventions they do. This is important to understand because how development agencies choose where and how they intervene establishes their ideological prioritization of issues related to justice and power outlined in Research Questions 1 and 2. Ideologies discovered throughout the literature reviews and analyses are summarized in order to establish the purposes for the interventions of various organizations focused on the causes and consequences of global climate change.

Summary

This chapter discussed methodologies of critical inquiry, literature review, and thematic analysis used to acquire the information needed to answer the research questions presented, as well as the inductive methods used to analyze the resulting data. To achieve equitable solutions for intervention in the developing world it is important to address each of the concepts identified. The literature on interventions related to development has been analyzed using the lenses of justice, power, and ideology. The extent to which interventions apply these lenses will determine its ability to providing equity for subsistence farmers in the developing world facing the consequences of climate change.

In the next chapter, I review and analyze the results these methods have yielded. This will serve as a guide for future development intervention so that issues related to justice, power, and ideology are met when development agencies design and implement projects related to global climate change in the developing world.

Chapter Four

Results, Analysis, and Contribution

Introduction

Since poor nations are particularly vulnerable to the effects of global climate change and industrialized nations are the largest producers of greenhouse gases that contribute to its effects there are principles that must be applied so that injustices can be addressed and are not in danger of being reproduced. It is therefore the goal of this research to determine what development agencies must keep in when mind when interventions intended to address the inequitable causes and consequences faced by subsistence farming communities in the developing world are proposed.

This research also establishes the concepts of justice, power, and ideology as key components to addressing inequities and asks if and how proposed interventions go about achieving them. Doing this prepares us to determine how development agency interventions have and might addressed these concepts when intervening to address issues of injustice faced by subsistence farming communities dealing with the effects of global climate change. Understanding the extent to which this has or has not been achieved by development agencies will enhance the development of future interventions.

This chapter reviews each of the research questions and provides the results collected to answer them. The data for each question is interpreted and analyzed using the methods described in the previous chapter to provide an answer to the overall research question, what principles must development agencies keep in mind so that injustices can be addressed and not reproduced? Following the results and analysis for each research question, the chapter concludes by

articulating the contributions of this research that explain how this research enhances our understanding of social justice in the food system and identifies areas for future research.

Research Question 1: Results and Analysis

This section provides results and analysis for Constitutive Research Question 1, which asks, how can we apply concepts of justice to development interventions focused on the consequences of climate change for subsistence farmers in the developing world? The results that provide an answer to this question focus on the ways in which justice is defined in the literature reviewed. The varying interpretations of justice discussed in this research include social justice, global justice, and climate justice. These definitions result in different ways that development agencies might apply concepts and understandings of justice. This is discussed in the analysis for this question by identifying circumstances where concepts of justice are applied by development agencies in their effort to address inequitable consequences of climate change in the developing world.

Results

The issue of justice in development interventions primarily relates to the ability of interventions to alleviate injustices created by the effects of global climate change, which are predominantly caused by wealthy nations. As previously discussed, Niles and Salerno (2018) point out that low-income countries will continue to be those who are most greatly affected by climate shocks. To address this injustice development agencies are trying to identify particularly vulnerable regions and communities to address the issues that they face (Lipper et al. 2014).

However, this presents challenges since the effects of climate change are incredibly varied and do not affect any two communities in a similar way.

The variety of ways in which communities can be affected by climate means that development agencies must have a clear understanding of how it is they are trying to intervene and what inequities they wish to address. For instance, Swift (2019) explains that social justice is often theorized in reference to issues of justice within individual states and societies, which can, and do, vary wildly nation-to-nation and culture-to-culture. This variance makes universal standards of social justice issues difficult to address. The challenge presented by climate change is that social injustices can be exacerbated by its consequences. When justice has to do with inequities across nations, global justice might be more useful.

Global justice is primarily focused on the inequities that exist between societies rather than within any one society. It is, therefore, better suited to address the inequities caused by climate change because it is an approach based in globally-relevant human rights, instead of nation-state-specific definitions (Mohai et al. 2009). In the context of climate change, this approach also shifts the focus on to what is causing injustice rather than simply addressing its consequences. This is what Swift (2019) identifies as distributive justice, which are, “principles that apply to the distribution of benefits and burdens” (49). This is applicable to how we deal with climate change because it would enable development agencies to focus on the nations and activities that function as the primary contributors to climate change. Because developed nations have a greater contribution to climate change than subsistence communities an application of global justice would require developed nations, through quantifiable methods, to address their level of pollution, thereby assuming the burden of the consequences.

Another possibility for developing principles that can achieve equitable results in subsistence farming communities would be to pursue climate justice. Climate justice refers to the inequities that exist among nations and focuses on, “who is vulnerable to climate disasters by race, ethnicity, class, and gender” (Mohai et al. 2009, 420). Climate justice also seeks to address the inequities faced by vulnerable communities by influencing social policies at the national and international levels. Since the threat of climate change is understood by many human rights organizations, it has led to the strengthening of partnerships between the scientists, climate activists, and affected communities. Through this type of cooperation, development interventions can provide the methods and resources necessary to adapt to such changes. For instance, development agencies have been able to scientifically improve upon local adaptations to climate change making them adaptable to a wide range of communities facing a variety of effects (Dey et al. 2019). This makes climate justice a promising avenue for development agencies who seek to achieve goals that address both the inequitable causes and consequences of climate change. In the following section I discuss additional principles development agencies can utilize that, if followed, would maximize their ability to address issues related to justice for subsistence farming communities in the developing world.

Analysis

Regardless of the type of justice that is pursued by a development agency, it is the purpose of that agency to address the inequities faced by affected communities to achieve justice on their behalf. This begins with identification of vulnerable communities. As previously stated by Perez et al. (2015, 96), vulnerability refers to the “extent to which a natural or social system is prone to damage.” Development agencies, therefore, need principles in place to recognize where

vulnerable communities exist and how justice can be achieved in each situation. To do this, Eakin and Luers (2006) have identified three approaches that, if followed, will help development agencies identify vulnerable communities where they exist. These approaches are risk/hazard, political economy/political ecology, and ecological resilience. The threat that is posed to an individual community and the resources available to them to adequately respond will guide the actions of a development agency in determining which approaches will enable applications of justice are most appropriate in that scenario. I review each approach below, considering their potential connections to varying definitions of justice.

First, a risk/hazard approach identifies the possibility that an individual or a community would be faced with an environmental hazard. This approach is specifically focused on environmental circumstances and the threat they may pose to the livelihood of a given community. Understanding the risks and hazards posed by environmental circumstances is necessary for development agencies to determine where the most immediate climatic threats exist. Risk/hazard helps to identify the regions or scenarios in which the threat of a climatic event is most immediate. These scenarios make the inequities caused by climate change so apparent because it makes clear the cause of the issue at hand, who is expected to respond, and who has the ability to do so (Mohai et al. 2009). As a result, an understanding and application of climate justice is necessary to address the threat that is posed to a community. This is because development agency resources can quickly be made available. Meanwhile, social justice would also be applicable since it accounts for the management of potential future issues that would reduce vulnerabilities, thereby promoting equity (Eakin and Luers 2006).

Next, a political economy/political ecology focus includes the social institutions relevant to a community and the resources that a community has at their disposal to respond to climate

shocks. Understanding how a community is organized and operates is important in determining their capabilities of addressing any immediate threats to their livelihood. This is reflective of social justice since it deals directly with the those who lack access to resources. In their research, Niles and Salerno (2018) found that applying principles of social justice can help communities overcome this by providing the ability to build adaptive capacities. They also write that his approach can provide agencies with the ability to manage the scope of interventions because it recognizes the varying capabilities of separate individuals, households, communities, and regions.

Finally, an approach focused on ecological resilience analyzes the reliance of a community on environmental systems and determines the extent that a system must degrade for a community to become vulnerable to climate change. It also incorporates the way in which ecosystems are managed and assess the resources available to communities to respond (Eakin and Luers 2006). The authors state that a community is not resilient if it cannot adapt to further environmental degradation, therefore, applying an understanding of climate justice would allow development agencies to create systems that respond to environmental degradation. Development agencies would also be able to focus on issues related to resource management and maintenance meaning that global justice could be applied to hold polluting nations accountable to contribute to the inequities that are created.

Each of these is an important approach for development agencies to keep in mind to achieve justice on behalf of affected communities. Additionally, the urgency with which communities must confront the consequences of climate change adds to the importance of recognizing vulnerable communities. This is a critical first step for development intervention to achieve justice and work towards addressing inequities created by climate change. These

interventions can promote justice and as the following section shows, aspects of participation and power are being adapted to these interventions to meet the specific needs required by affected communities.

Research Question 2: Results and Analysis

This section provides the results and analysis for Constitutive Research Question 2, which asks, how might interventions focused on global climate change impacts on subsistence farming communities created by development agencies address systemic issues of participation and power? The results begin with a review of the importance of emphasizing power and participation, followed by three areas to focus on as prescribed by the literature. This section is followed by an analysis where I provide recommendations for how development agencies can create equitable interventions that emphasize the need for power and participation in subsistence farming communities facing the consequences of climate change.

Results

Providing communities with the opportunity for participation and giving them the ability to maintain power are perhaps the most vital aspects of equitable development intervention. As noted by Dey et al. (2019, 89) power is “the freedom to make informed decisions.” Communities need to be allowed to make the decisions that are right for them, reflect their cultural values, and address their unique climatic circumstances.

Encouragingly, what this research has found is that issues of participation and power are receiving much more attention in development literature. Zurba et al. (2019) acknowledge there is, “a growing awareness among academics, governments, and organizations” that more needs to

be done to build equity, and enhance social and environmental benefits, in collaboration with local participation (1021). My research has found three concepts that exist as overarching themes that guide development agency interventions. These concepts focus on regional adaptation, community-led interventions, and empowering groups that have been marginalized within communities.

First, by focusing on regional adaptation, development interventions have successfully been able to promote participation and power at a much smaller scale. For instance, (Niles and Salerno 2018) discuss mechanisms that foster resilience and adaptations that combat food insecurity in sub-Saharan Africa. These mechanisms include having development agencies focus on improving the ability of communities to respond to climate shocks. Since the way climate effects individual regions and communities is so varied, the authors argue this focus should be on poverty alleviation and increased education on responsive strategies in particular regions. The level of success communities have in their ability to respond would enable development agencies to, “assess whether certain interventions can be scaled up across regions” (3).

Similarly, evidence of solutions can be seen by increasing the influence of community-led interventions globally and has proven to be generally more responsive to specific changes in climate. It has been shown that promoting participation enhances knowledge and facilitates dialogue between stakeholders and communities (Zurba et al. 2019). An example of this in India is the Honey Bee Network a locally based and community-led non-profit. Here, Dey et al. (2019) show that local solutions to the effects of climate change have been brought to the attention of development agencies and have been enhanced through agency resources and scientific augmentation. Another area for promoting the role of community participation is through community-based management of natural resources (Mustalahti 2019). In addition to the

promotion of equity within communities, efforts such as these have proven to be highly effective at combating local and regional effects of climate change.

Finally, the concepts of participation and power can be applied to specific groups who are marginalized by their own communities. This scenario applies particularly to women and the elderly. Bryceson (2018) shows how women who have been marginalized in rural, patriarchal communities in southern Africa have been able to circumvent monopolization of land rights through smallholder contract farming. The ability to overcome local and regional prejudice provides further evidence for the ability of solutions that address issues of power and participation as vital for future climate focused interventions.

Other times, marginalization is the result of bureaucratic requirements of responsiveness, management, and engagement that are beyond the means of local users, necessitating the takeover by centralized powers and reducing local input. To address issues of marginalization in society, Mustalahti et al. (2019) recommend decentralization models that reallocate responsibilities that engage communities and citizens. If development agencies can identify where this occurring, then their resources, the authors argue, would be capable of managing tasks and duties, with power given to local decisionmakers. To validate their claims, the authors cite case-studies of locally based forestry programs in Mexico and Nepal, as well as land use planning in Tanzania. The importance of capability was emphasized in each case and resources were distributed accordingly.

In the following section, I analyze these results by making recommendations for how development agencies may create interventions that emphasize the role of power and participation in responding to the consequences of climate change.

Analysis

The review of literature has shown that small-scale projects are most effective when it comes to increasing participation amongst communities. These types of interventions can address the specific needs a community faces and utilizes local knowledge to confront the inequitable effects of climate change. Small-scale, regional, and local projects also can achieve equity for women in patriarchal societies, or for individuals who have been unable to contribute to developing solutions. Therefore, as development agencies work to create interventions capable of increasing participation amongst communities and individuals there are a few things they must account for and keep in mind to achieve these goals.

First, development agencies must understand who the stakeholders are and specifically identify the communities that will benefit from intervention. This process includes identifying decision-makers within the community. Reed et al. (2009) describe that this can be achieved through either a normative or instrumental process. Normative approaches have the benefit of communicating the reality in a way that recognizes multiple perspectives and is, therefore, a more democratic process. Meanwhile, instrumental approaches identify means to achieve desired outcomes through available organizational and governmental resources. While this approach does not place as much emphasis on multiple perspectives, it still relies on a local understanding of consequences, utilizes available resources, and is a more pragmatic method for dealing with imminent consequences. The authors also state that it is possible to achieve instrumental outcomes through a normative approach if relationships with decision-makers are transformed to be more inclusive and reflective of community attitudes.

Once identified, it is important that development agencies understand the relationship between the stakeholders that are taking part, particularly if they are part of separate

communities. Cooperation among stakeholders is crucial for the success of any development intervention and affected communities must come together to achieve a common goal. By doing this, communities and development agencies alike can focus on processes that emphasize sustainability (Contini et al. 2020). Additionally, understanding the relationships between stakeholders and communities leads to increased knowledge that can be utilized by agencies to address multiple, intersecting consequences. This is what Reed et al. (2009) identify as knowledge mapping and is critical to increasing the power given to communities in dealing with the consequences of climate change. Furthermore, the increased cooperation has been shown to be capable of reducing regional conflict by establishing previously nonexistent systems of resource management (Mustalahti 2019).

As development agencies continue to create interventions for subsistence farming communities facing inequitable causes and consequences of climate change, they must recognize complex relationships that exist within these communities. In doing so, they are better able to increase local participation and address the inequities these communities face. The recognition of power and participation for affected communities is increasingly noticeable in the literature, and many groups focused on climate change-related interventions are adjusting their interventions accordingly to account for stakeholders. However, some agencies, particularly those focused on macro-solutions at the international level, need to do more to promote the concept of power in subsistence farming communities. The following question and analysis explain why this concept is still not the standard model for modern day development agency interventions.

Research Question 3: Results and Analysis

This section provides the results and analysis of Constitutive Research Question 3 which asks, how have ideologies framed development interventions focused on the consequences of climate change for subsistence farming communities in the developing world? The results identify various ideologies that have a history of guiding the policy of development interventions. These ideologies, I have found, rarely acknowledge the needs of communities, and only serve the interests of those who provide funding and create policies. Meanwhile, the analysis prescribes methods development agencies can utilize that limit the influence of ideology in the creation of their development interventions. If followed, these methods will help to achieve equity within and on behalf of subsistence farming communities faced with the consequences of global climate change.

Results

Intervention and development policies are very much formed by ideology, particularly economic ideologies. An ideology is a construct that is used to form a set of principles that can guide an action (Bennett et al. 2005). For instance, neoliberalism, an economic ideology that prioritizes “market forces, trade and privatization,” dictates an overwhelming amount of development agency proposals (Stronge et al. 2019). Organizations that form and provide resources for development interventions, such as the International Monetary Fund (IMF), Asian Development Bank, the United Nations, along with national governments, favor private sector solutions in their project development (Stronge et al. 2019). This market-oriented approach rarely develops equitable solutions that promote the concepts of justice and power that have been discussed in this research.

Development agencies, particularly those at the international level, use neoliberalism to pursue economic growth and stability in developing nations. The IMF attempts to eradicate poverty through macroeconomic solutions and free-market policies (Daoud et al. 2017). The reason for this is primarily because a significant number of international development agencies find that state-led solutions are costly and inefficient (Daoud et al. 2017). Examples of the influence of market-based solutions in the climate change interventions that have already been covered in this research, such as sustainable entrepreneurship and climate-smart agriculture.

In addition to lacking in their ability to promote equity in developing nations, market-based solutions are not always the most effective intervention when responding to immediate issues such as climate change. Climate change significantly disrupts the growth of developing markets. Therefore, any investment on the part of development agencies that subscribe to a neoliberal ideology may have the costs of their climate interventions offset by future climatic events. These types of interventions also rarely share the communal responsibility for climate impacts because when intervention is no longer cost-effective neoliberal developers are likely to withdraw their resources (Füssel 2010). Furthermore, neoliberal ideologies are not always reflective of the needs faced by developing nations (Stronge et al. 2019). These needs may be tied to improved resource management, responsiveness to climate shocks, or improved awareness and education of climatic fluctuations.

Ideologies are not only informed by economic perspectives, but institutional and political ideologies as well. This research has found that these ideologies tend to be more equitable, since they are more often informed by local institutions that desire equitable results. Similarly, these methods of intervention tend to be more democratic (Mustalahti et al. 2019). This is because local leaders are generally more responsive and aware of local, “capabilities, needs and

aspirations” (2). However, these types of interventions also run the risk of short-sighted solutions and favoring inefficient mechanisms. Furthermore, the type of government or political institution that controls resources and oversees communities affected by climate change plays a significant role in how intervention is managed (Chang et al. 2018). Examples of this are evident in the way in which different political parties view environmental threats and the way in which political ideology informs energy policy (Brace and Geoghegan 2011). This political ideology does not only affect the way in which climate change consequences are viewed and managed, but also greatly influence policy over the emission of greenhouse gases in industrialized nations. Therefore, the way in which different ideologies view climate change effects, policy, and intervention is directly linked to how climate change has been addressed globally.

In the following section I discuss methods that development agencies must keep in mind that may limit the influence inequitable ideological principles have on their intervention policies. By following these prescribed methods, development agencies will be better positioned to address inequities within affected communities by seeking justice and increasing community participation.

Analysis

There is no doubt that investments and traditional market strategies can help to alleviate the effects of climate change. They can provide much needed relief from food insecurity and can offer access to resources previously out of reach. However, this relief does not address the systemic issues of poverty that is being exacerbated by global climate change. To address issues

of justice and power new ideologies and economic strategies need to be applied to development interventions.

While an influx of investment can enhance an initial response to climate fluctuations, they do not always address the specific injustices present in a community. The needs of communities require assessments on vulnerability to determine more effective interventions and it has been shown that neoliberal approaches do not produce, “broad-based, equitable, results” (Füssel 2010; Stronge et al. 2010). Development agencies should, therefore, recognize communal needs and support interventions that focus on eradicating poverty and enhancing food security (Stronge et al. 2010). This can be achieved through state-led interventions and the enhancement of locally developed responses to climate fluctuations (Dey et al. 2019).

While state-led interventions are generally more successful at identifying and responding to the consequences of climate change, achieving equity demands that governments and political institutions be scrutinized to assess how ideology might inform their priorities. Berdiev et al. (2012) have found that nations with left-wing governments and that have embraced democratic institutions are more likely to exhibit flexibility when dealing with these issues. Furthermore, the researchers found that flexibility is an overall characteristic of developing nations who desire to improve quality of life and employment opportunities for their people. This is in line with the findings of Bryceson (2018) who determined that developing nations in Africa are orienting their policy formation around the democratization of land and greater stakeholder control of local resources.

Examples of these democratic, state-led interventions have helped to achieve equity while allowing local communities to overcome the consequences of climate change, they have had to address. For instance, Rwanda has undertaken nationwide irrigation and livestock intensification

projects that are funded by direct investment through the federal government (Annual Report 2015). These projects have improved the nutrition of beneficiaries, provided sustainable access to manure for agricultural purposes, and increased marketable opportunities through the sale of calves and cow's milk. Furthermore, government reports state that to reach their goals, the professionalization of farmers is one of the most overarching concerns, which include continued outreach, investment, and educational programs, particularly for women.

These findings on the role of political ideology can be utilized to understand the advantages of state-led interventions that address the consequences of climate change but do little to address its causes, which are primarily the result of industrial activities in developed countries. Although policies in developing nations emphasize the importance flexibility and improved qualities of life in policies that address climate change, developed nations often have little desire or flexibility when formulating their policies (Chang et al. 2018). This is likely because these nations are more engaged with the globalized economy and, therefore, dependent on fixed financial systems (Berdiev et al. 2012). With this ideology, and their significant role in global policy, developed nations have little interest in reducing their role in the release of greenhouse gases.

Having this knowledge of ideology should help to explain the influence it has, and the potential barriers it creates to addressing the inequitable causes and consequences of climate change. Many global development agencies subscribe to an ideology that favors one form of economic development, political engagement, or governmental management. Arguments for the benefits of each can be made, but also come up short in the ability to create significant change and equitable results. It has been shown, for example, that market-led policies are capable of stimulating growth in the short-term if that is what is needed in that community, but ultimately

do not increase adaptive capacities. Also, although state-led interventions generally result in more equitable outcomes, this is only if they prioritize democratic participation in program implementation.

If development agencies wish to achieve equity, then they must establish democratic systems that limit the impact ideology has in the formation of their policies. This is because ideological principles rarely address the consequences of climate change at a systemic level. Rather, they should design flexible programs, focused on systemic issues related to climate change, that emphasize justice and participation. Without this the concepts communities cannot create their own methods for reducing consequences of climate change and justice cannot be achieved.

Contribution

This research addresses the problem of inequitable causes and consequences of climate change because I want to know if the problems faced by subsistence farming communities in the developing world are being addressed by interventions that have been proposed by development agencies.

Through an analysis of the concepts of justice, power, and ideology this research has identified criteria that development agencies must focus on that will allow them to address the inequitable causes and consequences of climate change in the food system. Through an analysis of each of these concepts it has been shown how they impact the livelihoods of subsistence farming communities. Likewise, this analysis has identified ways in which issues related to these concepts will worsen as climate change continues to accelerate.

The inequitable consequences addressed by this research include food insecurity, resource management, conflict, and poverty eradication. It is for these reasons that this research has discussed and recommended a conceptual framework that, if followed, will enable development agencies to create equitable intervention policies that address the needs of affected communities while promoting concepts related to justice and power. Without taking these steps climate change causes will not be addressed, inequities that are the result of climate change will be allowed to persist, and ecosystems will continue to deteriorate. That is why the purpose of this research has been to develop principles related to equitable climate interventions so that development agencies can use this data as a framework for future interventions.

Summary

This chapter has reviewed the research questions that relate to the problem of inequitable effects of climate change for subsistence farmers in the developing world. These questions identify the concepts of justice, power, and ideology as necessary criteria for development interventions. The data that has been presented shows how development agencies go about developing interventions and whether they achieve justice and equity through the established concepts.

While agencies have the intention of promoting justice within communities facing the consequences of global climate change, they are sometimes unable to achieve this due to their own ideological frameworks that prioritize issues of growth and stability over justice and equity. However, organizations that do not subscribe to an ideological framework are able to freely formulate interventions that meet the needs of the communities they are targeting. By going

about intervention planning in this manner, communities are given the opportunity to engage and participate in the development of their own prosperity.

Finally, this research has provided a framework that development agencies can follow to promote issues of justice and equity for subsistence farming communities. This contribution will hopefully allow communities to receive the justice that is demanded in the face of global climate change. The following chapter will conclude this research, provide a summary of its findings, and look towards other applicable areas of research.

Chapter Five

Conclusion

This research has addressed the social problem of inequitable causes and consequences of climate change faced by subsistence farming communities in the developing world. It achieved this by determining what approaches are currently being utilized by development agencies and by establishing practices that can be applied for future development interventions. This research has addressed these issues by answering three constitutive research question which were, first, how can we apply concepts of justice to development interventions focused on the consequences of climate change for subsistence farmers in the developing world? Second, how might interventions focused on global climate change impacts on subsistence farming communities created by development agencies address systemic issues of participation and power? Finally, how have ideologies framed development interventions focused on the consequences of climate change for subsistence farming communities in the developing world? These questions were asked in an effort to answer the overall research question which asked, as interventions are being developed to address the inequitable causes and consequences of climate change for subsistence farmers in the developing world, what principles must development agencies keep in mind so that injustices can be addressed and not reproduced?

This research has addressed this research problem by first outlining the inequities that exist because of global climate change such as food insecurity, age and gender inequity, and conflict as a result of resource management. In Chapter Two the role of development agencies was discussed, along with the interventions they have proposed and implemented on behalf of subsistence farming communities to confront these inequities. However, as we have seen, the way these interventions are devised and carried out do not always serve the interests of the

communities they are intended to support. Addressing these oversights and shortcomings is important as future proposals are developed to achieve justice for affected communities.

First, when addressing issues related to justice, agencies must put in place systems for identifying regions and communities that are most vulnerable to climatic change. Because the most affected communities contribute so little to the effects of climate change, it should be the purpose of development agencies to address this injustice. Although this solution cannot address the causes of climate change on its own, identification of vulnerable communities is the first step towards overcoming the inequities they are suffering due to the emissions of greenhouse gases by industrialized nations.

Secondly, if communities can be identified and reached, it has been shown that local solutions are often capable of being enhanced through agency resources. This is how development agencies need to go about improving participation and transferring decision-making power back to the affected communities. Because locals have often devised ingenious ways of addressing the consequences of climate change within their community it is most effective to utilize tools and resources that are familiar and accessible. This also has the added benefit of transferring knowledge between subsistence farming communities and development agencies who can then adapt similar adaptation techniques to vulnerable communities facing similar consequences elsewhere.

Lastly, this research has shown that the influence of ideology has prevented development agencies from achieving the justice and participation required for these communities. In particular, neoliberal ideologies have guided the development of many interventions, leading to market-oriented solutions that promote competition and have been shown to favor wealthy, international investors. These ideologies do not serve the interests of affected farming

communities and must be removed from solutions focused on climatic intervention in the developing world. These are often short-term solutions that do not address the source of the problem faced. Rather, state-led interventions that address poverty and food insecurity within communities have been shown to be more effective, largely because interventions such as these are focused on the needs of separate and distinct communities. The data contained in this research and the analysis that has been conducted has shown that these are the most effective ways for overcoming the inequities faced by subsistence farming communities faced with the consequences of global climate change.

Although these are steps that can be taken to ensure justice in immediate and future interventions, these do little to address the causes of global climate change. Industrialized nations are still the leading producers of greenhouse gas emissions that result in the consequences addressed by this research. However, by creating equity for vulnerable communities, it is possible to enhance livelihoods around the globe reducing such a high demand for mass, global production. By creating food, financial, and personal security within a community where they did not previously exist, they are capable of breaking free from globalized markets and industry. Future research in this subject could perhaps determine if this is the case with previously vulnerable communities that adapted to their climatic situation and ultimately achieved resiliency. If this were found to be true, it would provide an additional method and incentive for development agencies to pursue interventions that promote participation and justice for the developing world.

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