

ASSESSMENT OF A FOOD FOR WORK PROGRAM AND THE DROUGHT
SURVIVAL NEEDS OF ETHIOPIAN COMMUNITIES IN THE NORTHERN
TIGRAY REGION

A Thesis

by

RYAN MATTHEW COLLETT

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

December 2011

Major Subject: Agricultural Leadership, Education, and Communications

Assessment of a Food for Work Program and the Drought Survival Needs of Ethiopian
Communities in the Northern Tigray Region

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ABSTRACT

Assessment of a Food for Work Program and the Drought Survival Needs of Ethiopian Communities in the Northern Tigray Region. (December 2011)

Ryan Matthew Collett, B.S., Texas A&M University

Chair of Advisory Committee: Dr. Gary J. Wingenbach

The highland Tigray region of Northern Ethiopia has historically suffered significantly from drought shock events. These events, coupled with a high poverty rate have left a severe impact on the agricultural output and community survival of the region. Several development interventions have been implemented in Ethiopia to address the effects of drought and poverty, the largest being the recent Food for Work Productive Safety Net Programme (PSNP). The purpose of this study was to assess the food security and drought survival needs of Ethiopian communities, more specifically, communities in the Northern Tigray Region. The main research questions were: (a) what are major themes from the permanent literature on the PSNP's management policies' impact at the beneficiary level; and (b) what are common needs of drought prone villages in the Tigray Region of Northern Ethiopia?

Research Question (a) was approached through content analysis of six purposively chosen peer reviewed journal articles related to the implementation of the first five years of the PSNP. Data was analyzed through the constant comparative method and two major themes emerged: Targeting Policy, and Transfer Policy.

To address Research Question (b), the researcher traveled to four drought prone villages in the Tigray Region and facilitated a combination of Participatory Rural Appraisal and Rapid Rural Appraisal techniques to assess community-level needs. Interviews with Non-Governmental Agency employees, Ministry of Agriculture and Rural Development employees, and University faculty provided institutional perspective to the research question. Data was analyzed using the constant comparative method and inductively formed into 11 themes, housed in three sectors: Economic Diversification, Environmental Management, and Social Coping Mechanisms.

The results of this study concurred with food security literature; namely that mechanisms for selecting intervention beneficiaries (i.e., targeting policy) and the process for distributing benefits (i.e., transfer policy) are practical concerns at the village level in Ethiopia. Analysis of participatory data formed a framework of community drought survival needs in the context of the Tigray Region. Asset building, water management, and human capacity are example needs which emerged from this study and should be addressed for the long term improvement of Ethiopia's resilience to drought shock events.

DEDICATION

To my parents, Debbie and Steve Collett, I can never repay you for all that you have done for me, but it's a debt I am most grateful to be in.

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This work would never have come to fruition without the dedicated support of my committee members at Texas A&M University. Dr. Piya Abeygunawardena, thank you for sharing with me your life experiences, friendship, and wonderful country. Dr. Theresa Murphrey, thank you for your positive energy and insight. Dr. Kim Dooley, you are a teacher in the best sense of the word. Thank you for showing me the art and science of qualitative research. To my chair, Dr. Gary Wingenbach, thank you for your expectations, encouragement, and sense of humour. You would do anything for your students, and it has been a pleasure working and traveling the world with you.

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Finally, I would like to thank my family members for their love and patience: Tony, my brother and best man; Jennifer, my sister and fellow Aggie; Madeleine, my pearl of a Goddaughter; my wonderful parents, Steve and Debbie; and my beautiful fiancé, Erica, who has walked with me through all of this. Deus Caritas Est.

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INTRODUCTION

The survival of Ethiopia's population is commendable when considering the number and severity of shock events endured throughout the country's epic past. Droughts in particular are devastating and all too common in this arid country. Shock events are defined as "adverse events that lead to a loss of household income, a reduction in consumption and/or a loss of productive assets" (Dercon, Hoddinott, & Woldehanna, 2005, p. 5).

In 38 monitored years since 1950, there have been 18 recorded droughts or famines in Ethiopia (Mersha & Boken, 2005). The 1970s and 1980s were especially drought prone years; 1971-1975 saw 250,000 people and half of the livestock perish (Mersha & Boken, 2005). The 1984-1985 droughts were the worst on record with an estimated one million people dead and eight million affected by food shortages (Webb, von Braun, & Yohannes, 1992). An estimated 31 million Ethiopians now live below the poverty line, equal to \$0.45/day, and 6 to 13 million people face starvation annually (UNDAF, 2007). According to the Government of Ethiopia's Plan for Accelerated and Sustained Development to End Poverty

There is also extreme vulnerability with consumption rising and falling dramatically from year to year as the result of drought, ill health, or other family shocks. As a result, many families who are not currently poor are at constant risk

This thesis follows the style of the *Journal of International Agricultural and Extension Education*.

of falling into extreme poverty, and can never accumulate enough assets to break out of poverty. (as cited in, UNDAF, 2007, p. 4)

Statement of the Problem

The effects of drought can be devastating and long term, creating poverty traps in which poor households must choose between liquefying assets to maintain status quo conditions or saving assets to fight off future shocks (Carter, Little, Mogues, & Negatu, 2007). Carter et al. (2007) advised:

The notion that a random event (i.e., flood, drought, illness, unemployment spell) can have permanent effects, spelling ruin for a family, suggests that vulnerability (and perhaps poverty) can best be understood through the lens of poverty traps. (pp. 836-837)

Assets are critical to surviving a shock event. Dercon (2004) describes a minimum threshold of assets in a shock scenario below which families are likely to remain trapped in poverty, where advancing economically may become permanently prohibited. Ethiopia is especially vulnerable to this form of poverty trap because of its reliance on rain fed agriculture and propensity to drought shocks (Dercon, 2004).

Food Aid Policy

A majority of public work programs in Ethiopia are done through public Food-for-Work (FFW) projects (Bezu & Holden, 2008), where participants complete a certain amount of manual labor in exchange for food aid. FFW projects are the most widely implemented public work projects in Ethiopia (Bezu & Holden, 2008). Typically, the manual labor aspect of FFW projects includes constructing or maintaining natural

resource conservation structures (i.e., hillside terraces, trenches, or check dams). Even in years (e.g. 2004-2006) where Ethiopia exceeded agricultural production averages, food aid remained significant (i.e., 4-7% of total consumption; Tadesse & Shively, 2009). According to Tadesse and Shively (2009) this pattern justifies concerns regarding Ethiopia's "structural dependency on food aid" (p. 942). To combat chronic food insecurity and solve the failings of past aid programs (e.g., insufficient timing, targeting, and consistency) the Government of Ethiopia (GOE), along with a consortium of international donors, established the \$500 million per year Productive Safety Net Programme (PSNP; Andersson, Mekonnen, & Stage, 2011).

The novelty of the PSNP is its focus on reliable long term support rather than short term emergency relief for the chronically poor (Segers, Dessein, Nyssen, Haile, & Deckers, 2008). Knowing that years of food aid have not reduced chronic food insecurity in rural Ethiopia, planners of the PSNP set out to break the country's dependency on such aid with a system that would sustain participants through annual food gaps, while at the same time, "protecting their assets against 'distress sales' and building their resilience against shock" (Sabates-Wheeler & Devereux, 2010, p. 275), or as Andersson et al. (2011) put it, "enable households to smooth consumption so that they will not need to sell productive assets in order to overcome food shortages" (p. 119).

Drought in Ethiopia

Climate change and current drought exacerbates past droughts; over time, these shock events have held Ethiopia to #124 out of 135 nations on the 2010 Human Development Index (UNDP, 2010). The shocks themselves do not necessarily cause

poverty, but poverty conditions weaken the coping capabilities of a community.

Therefore when drought or other shocks occur, the effects are more devastating for those already living in impoverished conditions. With 75% of the population living on less than one dollar a day, even a less pandemic shock event can have severe consequences for Ethiopia (USAID, 2006). The areas where droughts have occurred in the past are more likely to experience drought shocks in the future (Webb et al., 1992).

The USAID's Congressional Budget Justification of 2004 provides scope to the situation in Ethiopia:

A combination of frequent drought, poor cultivation practices, and low levels of on-farm investment persistently undermine the productivity of the agricultural sector. The magnitude and depth of poverty means drought and other unanticipated crises can rapidly transform into the potential for famine. Each crisis increases the country's vulnerability to the most marginal of shocks. In the absence of alternatives, households are forced into depleting the very productive assets (e.g., oxen, farm implements) they require for future productivity. (p. 1)

With rain-fed subsistence farming accounting for a considerable amount of the population's food source, and with a growing population of 80 million (World Bank, 2008; Andersson et al., 2011), there is great vulnerability to the consequences of shock events (Mersha & Boken, 2005). When droughts and floods hamper growing capabilities, famine and the need for emergency assistance grows. An estimated 6.4 million people required emergency relief in late 2008 (Davis, Swanson, & Amudavi,

2009). Most relief is secured outside the Ethiopian government from external donor agencies (USAID, 2004). Because most farmers do not leave their land following a drought shock, there is a research need in understanding how farmers survive while staying on drought depleted land (McCann, 1987).

While droughts dominate as the most publicized shock events in Ethiopia, they do not stand alone. The most critical type of shock events in Ethiopia are climatic (drought, flood, erosion) and illness shocks. Experiencing one drought event in five years lowers per capita consumption by approximately 20% and by 9% for an illness shock (Dercon et al., 2005). Those most affected are female-headed households, those with little or no schooling, and those with small landholdings (Dercon et al., 2005). Dercon et al. states that “protecting households against shocks may well have a high return in fighting long-term ‘chronic’ poverty” (2005, p. 16).

Ethiopian Agriculture

Agriculture accounts for 80% of Ethiopia’s employment, but the country is plagued with chronic food insecurity (USAID, 2006). Ethiopia’s gross product and export earnings from agriculture are 52% and 90% respectively (Mersha & Boken, 2005). Abrar, Morrissey, and Rayner (2004) reported that 90% of crop output comes from the subsistence farming community. It is a largely rain-dependent sector with only 3% utilizing irrigation and a shortage of input purchasing (Abrar et al., 2004). Adding to production difficulties is a recent rise in food prices (Andersson et al., 2011), which becomes an even larger drain on poor farmer incomes.

The effects of just one season of drought can be felt by local farmers for several years. According to Contable and Belshaw (as cited by Mersha & Boken, 2005), the Ethiopian Highland Reclamation Study of 1989 concluded that more than half of the Ethiopian highland region has been eroded and 100 tons/ha of soil are eroded each year because of poor cropping practices; soil loss because of erosion is estimated at 1.9-3.5 billion tons/year.

Research Purpose

The purpose of this study is to assess the food security and drought survival needs of Ethiopian communities, more specifically, communities in the Northern Tigray Region. Two research questions which guided the study are:

1. What are major themes in the permanent literature on the Productive Safety Net Programme's management policies' impact at the beneficiary level?
2. What are common needs of drought prone villages in the Tigray Region of Northern Ethiopia?

Methods - Article 1

Data Collection

Content analysis of historical documents - or "material culture" as Patton (2002, p. 293) described - will be used to evaluate the impact of the FFW program in Ethiopia. Notter stated (as cited in Glass, 1989):

Historical research is not merely a collection of incidents, facts, dates, or figures; it is a study of the relationships of facts and incidents, of themes or currents of

social and professional issues that have influenced past events and continue to influence the present and future. (p.356)

Using content analysis of historical documents provides the researcher with “information about many things that cannot be observed” (Patton, 2002, p. 293).

Glass (1989) reasoned that historical research is implemented to address some combination of the following questions: Why events transpired; what implications or relationships are there to the present situation; or what accomplishments were produced? Historical research is preferred when the researcher wishes to study a case over an extended period of time but has little access or control (Yin, 2009). The researcher has no control over the existence of the historical data because its formation was dependent upon the actions of others (Glass, 1989). However, the researcher does control what data is considered significant and worthy of being synthesized into the analysis (Glass, 1989).

Historical documents will be chosen based upon their accessibility and relevance to the Food for Work program in Ethiopia. Data was obtained from six peer reviewed development journal articles related to the first phase of the PSNP implementation (from 2005 to 2010).

Data Analysis

Data was analyzed using the content analysis method: organizing coded data into themes and comparing the thematic groups to “capture relevant characteristics of the document’s content” (Merriam, 2009, p. 205).

Methods - Article 2

Research Design

Data was collected from four purposively chosen villages near the city of Mekelle in the Tigray region of Ethiopia. The four villages were chosen based on proneness to severe drought conditions and the researcher's accessibility to the village from Mekelle. The researcher used Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) techniques to address the research question. While PRA activities focus more on participant empowerment, RRA allows the researcher to elicit participant experiences and needs regarding drought survival and related topics. Questions and activities were initially focused on topics found in the literature (i.e., agricultural topics such as crops, soil/water conservation, income generating activities, water/sanitation, and education); in accordance with the emergent structure of this research, the researcher adjusted the questions and activities to investigate emerging topics relevant to the research question. Merriam (2009) summarizes this approach:

The researcher usually does not know ahead of time every person who might be interviewed, all the questions that might be asked, or where to look next unless data are analyzed as they are being collected. Hunches, working hypotheses, and educated guess direct the investigator's attention to certain data and then to refining or verifying hunches. (p. 169)

Data Collection

Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) were the primary means of data collection. Robert Chambers (1994) described PRA as a method

which “enables local people to share, enhance and analyze their knowledge of life and conditions, to plan to act” (p. 1437). PRA emphasizes empowerment of participants to analyze their own problems during data collection activities. Activities included community mapping exercises and the creation of community activity calendars.

RRA activities such as focus group discussions and interviews were also facilitated. While PRA focuses on participant empowerment, RRA allows the researcher to elicit participant experiences and needs regarding drought survival and related topics. Questions and activities for the focus groups centered on agricultural topics such as crops, soil/water conservation, income generating activities, water/sanitation, and education.

Population and Sample

This study used theoretical sampling to address Research Question 2. Theoretical sampling is similar to purposeful sampling but does not require that all participants be identified beforehand. Instead, “the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them” (Glaser & Strauss, 1967, p. 45). Analysis occurs throughout the data collection process and it further shapes the sample.

Instrumentation

Qualitative research assumes there is no single reality but that knowledge must be constructed and is highly contextualized (Merriam, 2009). Therefore the researcher is considered the primary data collection instrument. Researcher observations were recorded during the PRA activities and included in the data analysis. A semistructured

protocol formed around general topics discovered in the literature was used during RRA interviews and focus group discussions. A semistructured protocol allows the researcher greater freedom in exploring participants' perceived needs and gives the participants more control over the direction of the conversation. The wording and order of questions was not determined ahead of time (Merriam, 2009).

Data Analysis

Data collected using Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) techniques was coded and analysed using the constant comparative method of data analysis. The researcher then formed hypotheses to explain the relationships among data themes; unlike other research methods, hypotheses are not formed at the beginning of the study (Merriam, 2009).

Trustworthiness Criteria

Credibility (internal validity) deals with how well the research findings reflect the true reality of the study sample, or how well the researcher interprets the true meaning of the collected data (Merriam 2009). Multiple data collection methods and data sources were used to triangulate, or cross check, the interpretation of the data.

The transferability, otherwise known as external validity, of a study describes the degree to which the study's findings can be generalized to the population from which the sample was drawn (Merriam, 2009). However, the results of qualitative studies are highly contextualized and findings are not formally generalized to a set population. The reader must decide whether the conclusions, results, and implications can be extrapolated to another setting. Patton (2002) described extrapolation as "logical,

thoughtful, case derived, and problem oriented rather than statistical and probabilistic” (p. 584).

In addressing the criteria of reliability (aka. consistency or dependability) - terms describing the degree to which repetition of the research would result in similar findings - in qualitative inquiry, Merriam (2009) said:

Because what is being studied in the social world is assumed to be in flux, multifaceted, and highly contextual, because information gathered is a function of who gives it and how skilled the researcher is at getting it, and because the emergent design of qualitative study precludes a priori controls, achieving reliability in the traditional sense is not only fanciful but impossible. (p. 222)

Reliability, in the qualitative sense, was approached in this study by using triangulation, as described above, along with peer examination and an accurate audit trail (Dooley, 2007) which provided accounts of the data collection process and the forming of thematic categories during data analysis (Merriam, 2009).

The confirmability requirement - that findings are consistent with the data – was met through the audit trail and by conducting an analysis of researcher bias (Dooley, 2007), demonstrating that the researcher maintained neutrality among the participants.

CONTENT ANALYSIS OF A FOOD FOR WORK INTERVENTION IN ETHIOPIA

Introduction

Among other factors, drought shock events have created an Ethiopian state that is heavily reliant on international aid. For more than two decades, Ethiopia has been one of the world's leading recipients - the largest in Africa - of food aid (Little, 2008), but the aid has not brought with it an increase in individuals' food security or planning abilities (Andersson et al., 2011). For decades, emergency food aid was Ethiopia's primary strategy in combating chronic food insecurity; from 1994 to 2003 over five million Ethiopians received emergency food aid each year (Sabates-Wheeler & Devereux, 2010). In 2005, Ethiopia received 24% of the World Food Programme's aid to Sub-Saharan Africa. Aid made up over 9% of Ethiopia's cereal budget from 1994-2006, and that percentage grew during poor harvest years (Tadesse & Shively, 2009).

Even in years (e.g. 2004-2006) where Ethiopia exceeded agricultural production averages, food aid remained significant (i.e., 4-7% of total consumption; Tadesse & Shively, 2009). According to Tadesse and Shively (2009) this pattern justifies concerns regarding Ethiopia's "structural dependence on food aid" (p. 942). To combat chronic food insecurity and solve the failings of past aid programs (e.g. insufficient timing, targeting, and consistency) the Government of Ethiopia (GOE), with a consortium of international donors, established the \$500 million per year Food for Work initiative called the Productive Safety Net Programme (PSNP; Andersson et al., 2011).

Andersson, et al. (2011) stated that few rigorous studies attempt to examine the effects of food aid or safety net programs. The purpose of this qualitative study was to

evaluate the implementation of the first five years (i.e., 2005 to 2010) of the PSNP in Ethiopia. The research question that guided this study was: What are major themes in the permanent literature on the PSNP's management policies' impact at the beneficiary level? Data was collected through content analysis of six purposively chosen peer reviewed journal articles related to the PSNP's first five years of implementation. Data was analyzed through the constant comparative method, and two main themes emerged in response to the research question: Targeting Policy, and Transfer Policy.

Literature Review

Ethiopia's food security strategy of 1996 declared that no able-bodied person would receive free food aid and that the Government of Ethiopia (GOE) would distribute 80% of its food assistance through Food For Work (FFW) projects (Bezu & Holden, 2008). Other than providing additional food for consumption, Bezu and Holden (2008) found that FFW aid allowed normally risk adverse households the ability to purchase more inputs like fertilizer. Nega et al. (2010) described the FFW strategy as

By engaging the rural poor in public works such as the construction of rural roads, dams, soil and water conservation activities against payment either in cash or in kind, the FFW program has a short-term objective of protecting the poor against shocks (consumption smoothing) as well as a long-term objective of poverty reduction, growth enhancement and natural resource conservation. (p. 93)

Productive Safety Net Programme

The focus of this study was Ethiopia's most recent FFW intervention, called the Productive Safety Net Programme (PSNP). The GOE began the PSNP in January 2005; with total beneficiaries comprising 11% of Ethiopia's population (8.3 million of 71 million), it is the largest FFW program in Africa outside of South Africa (Sabates-Wheeler & Devereux, 2010). The novelty of the PSNP program is its focus on reliable long term support rather than short term emergency relief for the chronically poor (Segers et al., 2008). Knowing that years of food aid have not reduced chronic food insecurity in rural Ethiopia, planners of the PSNP set out to break the country's dependency on such aid with a system that would sustain participants through annual food gaps, while at the same time, "protecting their assets against 'distress sales' and building their resilience against shock" (Sabates-Wheeler & Devereux, 2010, p. 275), or as Andersson et al. (2011) put it, "enable households to smooth consumption so that they will not need to sell productive assets in order to overcome food shortages" (p. 119).

Assistance transfers in the PSNP are made through two avenues, Public Works (PW) and Direct Support (DS). The Public Works Programme, which 84% of PSNP beneficiaries participate in (Sabates-Wheeler & Devereux, 2010), provides assistance (food or cash) in exchange for free labor in constructing rural community development projects like terracing, road, micro-dams, and various soil and water conservation activities. Not only would the beneficiaries receive cash or food transfers, but a public good would be created, and investment is stimulated by reducing seasonal asset depletion (Andersson et al. 2011). Public works projects have traditionally been favored

by the GOE, which has historically feared free aid dependency, but unfortunately, inadequate attention is paid to the public work projects and they generally do not meet technical standards (particularly the irrigation and water supply projects), “probably because the objective of transferring cash or food to poor people was the dominant priority of the PSNP, while the infrastructure creation or asset-building objective was secondary” (Devereux & Guenthe, 2009, p. 6).

The GOE, within the context of the PSNP, has promoted a shift from food aid transfers to cash aid in an effort to avoid the cycle of dependency associated with food aid. The philosophy behind this policy shift argues that predictable transfers of cash, while bridging food gaps, can also encourage “productive investment, asset accumulation, market stimulation and employment multipliers” (Devereux & Guenthe, 2009, p. 6) which are aspects lacking in food aid. However, Alderman, Rajkumar, and Wiserman (as cited in Devereux & Guenthe, 2009) found the value of food transfers has slackened against the 10% rise in food prices in Ethiopia. This lack of purchasing power has pressured beneficiaries of the PSNP to switch from cash to food transfers, which are most often used for consumption as opposed to asset building or monetization (Devereux & Guenthe, 2009). While rising food prices is a positive condition for surplus producers, it is devastating for PSNP beneficiary subsistence farmers who already spend a majority of their income on food stuffs.

The Direct Support avenue assists the minority of beneficiaries who are not able bodied enough to participate in free labor projects. Devereux and Guenthe (2009) explained, the three objectives of Ethiopia’s PSNP: (a) level household food

consumption with the transfer of cash or food during months of high vulnerability; (b) protect assets by avoiding harmful strategies like liquidation or acquiring high interest loans; and (c) develop community assets through public labor projects that address infrastructure.

In the public works domain of the PSNP, participants work five days a month during the low season of agricultural production (Andersson et al., 2011). However, public works may take labor away from private on farm investment and a public safety net may reduce the demand for private asset accumulation (Andersson et al., 2011).

Beneficiary Targeting

Three criteria are examined to determine household eligibility for enrollment in the PSNP program: a household must have experienced and received food aid for at least a three month food gap, faced a sudden shock event which resulted in major asset depletion (Sabates-Wheeler & Devereux, 2010), and have available labor (Andersson et al., 2011). Administration of the cash or food transfer was to be handled at the district level and household enrollment decisions were made with input from the community and the lowest administrative unit at the village level.

Research Purpose

Andersson, et al. (2011) stated that few rigorous studies attempt to examine the effects of food aid or safety net programs. The purpose of this study was to evaluate the implementation of the first five years (i.e., 2005 to 2010) of the PSNP in Ethiopia. The research question that guided this study was: What are major themes in the permanent literature on the PSNP's management policies' impact at the beneficiary level?

Methods

Content analysis of historical documents - or “material culture” as Patton (2002, p. 293) described - was used in this study to evaluate the impact of the Productive Safety Net Program (a FFW intervention) in Ethiopia. Using content analysis of historical documents provides a researcher with “information about many things that cannot be observed” (Patton, p. 293). Fraenkel and Wallen (2006) described content analysis as “a technique that enables researchers to study human behaviour in an indirect way, through an analysis of their communications” (p. 405). This approach consists of subjectively interpreting the material in a selected text through coding and identifying emergent themes (Hsieh & Shannon, 2005).

Historical research is preferred when the researcher wishes to study a case over an extended period of time but has little access or control (Yin, 2009). There is no control over the existence of historical data because its formation was dependent upon the actions of others (Glass, 1989). However, the researcher controls what data is considered significant and worthy of being synthesized into the analysis (Glass, 1989). According to Zhang and Wildemuth (2009), “Samples for qualitative content analysis usually consist of purposively selected texts which can inform the research questions being investigated” (p. 2). In this study, historical documents from permanent literature were chosen purposively based upon their accessibility and relevance to the PSNP in Ethiopia. Table 1 lists the selected articles’ identifier, author, journal, and year published. Data was obtained from the results, findings, discussions, and conclusions sections of these six articles.

Table 1

Purposively Selected Articles for Content Analysis

Code	Author(s)	Journal Title	Article Title	Year Published
A1	Holden, S., Barrett, C. B., Hagos, F.	<i>Environmental and Development Economics</i>	Food-for-work for poverty reduction and the promotion of sustainable land use: can it work?	2006
A2	Gilligan, D. O., Hoddinott, J., & Taffesse, A. S.	<i>Journal of Development Studies</i>	The impact of Ethiopia's productive safety net programme and its linkages	2009
A3	Nigussa, F., & Mberengwa, I.	<i>Journal of Sustainable Development in Africa</i>	Challenges of productive safety net program implementation at local level: The case of Kuyu Woreda, North Shewa Zone, Oromia Region, Ethiopia	2009
A4	Bishop, C., & Hilhorst, D.	<i>Journal of Modern African Studies</i>	From food aid to food security: The case of the safety net policy in Ethiopia	2011
A5	Wheeler, R. S., & Devereux, S.	<i>Food Policy</i>	Cash transfers and high food prices: Explaining outcomes on Ethiopia's productive safety net programme	2010
A6	Andersson, C., Mekonnen, A., & Stage, J.	<i>Journal of Development Economics</i>	Impacts of the productive safety net program in Ethiopia on livestock and tree holdings of rural households	2011

For inclusion in this content analysis, articles had to meet three selection criteria: They had to be published in peer reviewed journals specializing in international economic development or food security policy; include analysis of the PSNP's first five years of implementation (2005 to 2010); and be freely accessible to the researcher. These criteria aided the researcher in selecting articles relevant to answering the research question (Patton, 2002).

Data was analyzed using the constant comparative method: organizing coded data into themes and comparing the thematic groups to “capture relevant characteristics of the document's content” (Merriam, 2009, p. 205). Themes were not determined prior to data analysis, but emerged through the constant comparative process (Fraenkel & Wallen, 2006).

The unit of analysis – or “the basic unit of text to be classified during content analysis” (Zhang & Wildemuth, 2009, p. 3) - used in this study were sentences, or groups of sentences, found in the results, discussions, or conclusions sections of the six purposively chosen scholarly research articles. Each article was given an identifier (A1 – A6) to track the origin of the coded units. Each unit of analysis reflected an independent opinion or conclusion concerning the impact of the PSNP's implementation policy in Ethiopia. Themes were inductively generated by constantly comparing the coded units and reducing the data into major themes and respective subthemes that addressed the research question.

Analysis of Findings

The first round of analyzing the six selected journal articles' content revealed 11 initial codes: asset building, background, graduation, income, investment, labor allocation, local capacity, policy development, risk aversion, targeting, transfer policy, and perceived impact. During the second round, the researcher collapsed the coded data into major themes and respective subthemes that responded to the research question. This inductive process resulted in the emergence of three main themes related to the PSNP's implementation policy: Perceived Impact, Targeting Policy, and Transfer Policy. Because the purpose of this study was to examine the management and implementation of the PSNP's first five years of activity, the Perceived Impact theme will not be reported on in this study. The data units comprising this theme are highly specialized to the particular article from which they emerged. In other words, PSNP impacts reported in article A2 are independent of impacts reported in article A3. However, the content in each article related to PSNP's targeting and transfer policies has implication across all six articles. The following section is an exposition of these two themes and their associated subthemes.

Theme A: Targeting Policy

Implementation of the PSNP required that some Ethiopian's were enrolled as participants and some were not. This decision was limited by a quota set by GOE's Ministry of Agriculture and Development (MoAD). The MoAD issued the Programme Implementation Manual (PIM) for the PSNP intervention in 2004. This document acted as the main resource for the administration of the PSNP. The PIM describes the targeting

implementation criteria. The researcher did not acquire access to the complete PIM from the GOE, however, reference to the PIM's policies were found in the Overseas Development Institute's report, by Sharp, Brown and Teshome (2006), on PSNP targeting. The PIM, as cited in Sharp et al. (2006), operationalizes the 'chronically food insecure' label which is a necessary requirement for inclusion (targeting) in the PSNP:

- For the purposes of the PSNP, a household is considered chronically food insecure if it is located in one of the 262 chronically food insecure [districts];
- It has been assessed by a mix of administrative guidelines and community knowledge to have faced continuous food shortages (usually three months of food gap or more) in the last three years and received food assistance;
- It has become more vulnerable as a result of a severe loss of assets and are unable to support themselves (last 1-2 years);
- It is without family support and other means of social protection and support. (p. 4)

Once enrolled in the Public Work (PW) aspect of the PSNP, the government administration determined the PW activity, location, and time frame of the activity. These aspects emerged in Targeting Policy Theme.

Labor Allocation Subtheme

How labor was allocated during PW activity became one subtheme of Targeting Policy. A concern was raised that PSNP PW activities might have crowded out private investment activities due to its intensive labor requirement (A6). To counteract this negative impact, A1 suggests that all FFW initiatives "need to be timed so as to

minimize competition with other construction activities, i.e., when the opportunity cost of labor is low for the poor households who are the primary intended beneficiaries of the long-term investments.” In a focus group discussion reported on in A3, participants noted that community needs and site selection related to PSNP PWs were not “demand driven” and that without the necessary capacity, poorly targeted PW construction projects are difficult for private community members to maintain. If selection of PW projects are not made with significant local buy in and careful definition of property rights, the sustainability of projects - which are intended to be public goods, bringing long term conservation improvements to the community level - is jeopardized (A1). Without proper targeting, “it is a waste of resources to build such structures in the first place” (A3). A4 also contributed that the local capacity of PSNP administration may not be up to the challenge of translating complex development policies into ground level results.

The location of labor allocation may contribute to crowding out of private investments in land improvement. A1 wrote:

Given the spatial externalities associated with soil and water conservation structures among contiguous farms, there may be natural disincentives to undertake private, uncoordinated investment in land improvements that will benefit one’s neighbors or that may prove unproductive in the absence of complementary investments by neighbors upslope.

This illustrates one of the key responsibilities of PSNP’s targeting policy; that special attention should be given to the microeconomic impact of labor allocations. Labor

should only be allocated for PW activities in areas where the beneficiaries' "willingness to invest are limited" (A1). PSNP labor must also be allocated with sensitivity to gender.

In the project areas, male and female PSNP participants are assigned similar tasks which in some cases demand a lot of stamina. Women focus group discussions also revealed that no special consideration is given to women regarding the nature of work they are assigned to do in the region. (A3)

Administrative Bias Subtheme

Concerns of PSNP administration bias affecting enrollment emerged as a subtheme of Targeting Policy. One focus group, reported on in A3, accused the local administration's targeting process of being "froth with nepotism and corruption." That same study suggested administrators used PSNP targeting as campaign leverage in the 2005 national legislative election in Ethiopia. Sharp et al., (2006) found that 25% of surveyed households reported that their enrollment in the PSNP was due to political affiliation. According to A3, women focus group discussions concurred that political influence affected PSNP targeting.

A4 proposes that bias displayed by PSNP administrators may have been to encourage poorer households to enter a resettlement program rather than the PSNP:

The practices of the officials were justified by appealing to the notion of the dependency mentality. By claiming that poor people had brought their misery on themselves and blaming their poverty on their laziness, officials could justify steering people toward resettlement. As a result, the benefits of the PSNP, which

were designed to include chronically food-insecure people, were reserved by local officials to the mid-wealth group. (A4)

Local Input Subtheme

Within the larger Targeting Policy theme, but closely related to both the Labor Allocation and Administration Bias subthemes, emerged the local input subtheme. This centers on the notion that the PSNP, for most effective management, requires the collection and analysis of input from community participants. A1 reported that “local involvement in the identification, implementation, and maintenance of the FFW public good investments is very important if de novo FFW investment is to prove durable.” A3 gives another illustration of the need for local input:

It was highlighted that the major problem in the [district] is the shortage of potable water and yet this issue was never considered in the program by the authorities. Instead, focus was given to bund construction and check dam construction, which are not priority areas for the community. Thus, it is evident that there is a mismatch between the people’s needs and the implementing agencies’ due to lack of community participation in the decision making process.

Theme B: Transfer Policy

The Transfer Policy theme explains the payment of PSNP benefits to the participant households. Those benefits can either be direct support or payment for completed PW hours. Initially, according to the PIM (as cited by Sabetes-Wheeler & Devereux, 2010), the PSNP only allowed cash transfers - instead of in kind food transfers - if the following conditions were met:

- food is available for purchase at local markets;
- the local market will not suffer detrimental effects because of the artificial surge in cash, or the effect will be less burdensome on the market than an increase in food; and
- the district administration has the necessary capacity to support the market intervention.

The purpose behind these conditions was to ensure that cash transfers only happened in markets with the capacity to handle the increased demand pressures associated with an influx of cash; otherwise, food transfers were to be given to the low capacity markets (Sabetes-Wheeler & Devereux, 2010).

The Transfer Policy theme is comprised of several subthemes: Transfer Amount, Transfer Type, and Transfer Reliability.

Transfer Amount Subtheme

The PSNP cash transfer payment rate for PW beneficiaries was six Birr per day in 2006, which was sufficient to purchase three kilograms of staple grain (Sabetes-Wheeler & Devereux, 2010). Focus group discussions described in A3 stated “that the amount of cash transfer (six birr/day/person) is too little and cannot support the consumption level of the households.” Insufficient transfer amounts may be more a problem of PSNP cash management than lack of funds. No response was made by PSNP administration to rises in regional food prices or inflation of the local economy (A5). The PSNP’s lack of flexibility and response to microeconomic market fluctuations was

described in A5's comparison of food prices in the Tigray, Oromiya, SNNPR, and Amhara regions of Ethiopia:

The conversion rate of PSNP cash transfers into food staples was highly variable from [district] to [district] and from month to month. Because of this price variability, the purchasing power of the cash transfer in terms of staple cereals varied by more than 100%, from as little as 2.5 kg (in Tigray in mid-2005) to as much as 5.9 kg (in SNNPR in late 2005). On average over the year, 6 Birr could purchase more than 3 kg of staple food in two regions (Oromiya and SNNPR), but less than 3 kg in the other two regions. So PSNP beneficiaries in Oromiya and SNNPR received more cash than they needed to meet their subsistence food needs, while beneficiaries in Amhara and Tigray received less cash than they needed.

As outlined in the above scenario, PSNP benefits, in purchasing power terms, are lower than planned in some regions. This makes it difficult for beneficiaries to develop productive assets with transfer payments, which is one of the goals of the PSNP (A2).

Transfer Type Subtheme

The PSNP benefit transfers for PWs take the form of cash or food in kind. One study concluded that the community prefers in kind food transfers and opposed the present cash system (A3), which was insensitive to local grain markets. In a situation of inflated food prices and fixed cash transfers, there is a smaller ratio of cash to food welfare gains (A6). Recipients of food transfers have experienced better income growth

than their cash counterparts; this has helped in swaying community perception in favor of in kind food transfers (A6).

A6 wrote that “an appropriate response to inflation is to reconsider the balance between cash and food transfers, or alternatively to introduce index linking to cash payments, to ensure that they retain their value irrespective of food price movements.” An index linked cash transfer would vary in amount according to the microeconomic situation of the community, but to implement it would require “unprecedented flexibility by government and/or donors in terms of instruments (cash, food or vouchers) and financing” (A6).

Transfer Reliability Subtheme

Transfer Reliability refers to the management of the temporal and location aspects of beneficiary payments, or to put it another way, it addresses the question of how consistently, in what time frame, and at what location transfer payments are made to PSNP beneficiaries. These seemingly fringe factors must be considered because they have a direct impact on beneficiary welfare. Consider this example from A3:

It is also noted that the location at which payments are made – [district] town – is often too far from some [villages] and participants are made to stay up to two days waiting to be paid transfer. In such cases, affected participants have to spend extra money for food, transportation, and accommodation.

Not only the timing, but the reliability of transfers emerged as an important factor in proper PSNP management. If transfers are not reliable, the poor are forced to use

destructive coping strategies such as liquidating productive assets, which is contrary to goals of the PSNP (A4):

Poor people related that food aid and other projects were unreliable and not sufficient to provide sustainable survival. As a farmer and food aid recipient in Selam Sefer said: We only believe that food aid is going to arrive when we have it in our hands. (A4)

Conclusions

The purpose of this study was to evaluate the implementation policies of the first five years of the PSNP. The researcher did not have access to actual PNSP administrators or beneficiaries in Ethiopia, so the methodology selected was a content analysis of six peer reviewed journal articles related to the PSNPs implementation from 2005 to 2010. Using constant comparative analysis of the articles' contents, the researcher established that two main themes emerged which have a direct influence on the PSNP's implementation and impact at the beneficiary level. Those themes were Targeting Policy and Transfer Policy.

Proper Targeting Policy emerged as a needed component of a successful FFW engagement in Ethiopia. The main objective of the PSNP's targeting policy, according to its Project Memorandum (Sharp et al. 2006), is to "guarantee timely and adequate transfers to the most food insecure people in the most food-insecure areas" (p.4). This study revealed three key implementation subthemes which must be addressed to achieve this targeting objective: Labor Allocation, Administrative Bias, and Local Input.

PSNP's PW activities are designed to correct negative externalities and reduce conditions which invite environmental shocks, while at the same time bridge food gaps of chronically food insecure households. PW labor should be allocated in ways that are sensitive to private investment (crowding out effects), location, and gender roles within particular communities. This requires substantial effort on the part of PSNP administrators to understand both the intended and unintended effects of the intervention, and adjust the policy accordingly. Each village may require community needs assessments and subsequent project monitoring and evaluation to ensure that actual PSNP beneficiaries meet the target characteristic of chronic food insecurity. Some mechanism must also be designed to circumnavigate the political pressure and influence of PSNP targeting.

Transfer Policy allows PSNP beneficiaries to increase their welfare through cash or food transfers. The purpose of these transfers is to allow beneficiaries to bridge annual food gaps. The questions of which transfer mechanism to use, either cash or food, is common FFW intervention analysis. In years leading up to the PSNP, Ethiopia was inundated with food aid from international donors. However, fears of dependency and the inflexibility and high transport costs of food aid (Barrett & Maxweell, 2005) shifted the focus to cash transfers. During the beginning of the PSNP, GOE administrators pushed for an increase of cash transfers, with restrictions that it only be available in regional markets where food was available for purchase. However, this research supposes that market fluctuations and externalities are complex in rural Ethiopia. A regional cash transfer policy may adjust well to chronically food insecure markets where

an influx of cash can significantly affect food prices. Data from the content analysis shows that in kind food transfers may increase overall beneficiary welfare to a greater extent than cash.

Regardless of mechanism, it is essential that transfers are made in a timely, reliable, and localized manner. To establish a system of transferring PSNP benefits efficiently, administrators must conduct participatory needs assessments at the community, rather than regional, level. Local feedback from the needs assessments must play a central role in future transfer policies.

PARTICIPATORY NEEDS ASSESSMENT OF COMMUNITY DROUGHT SURVIVAL IN THE TIGRAY REGION OF NORTHERN ETHIOPIA

Introduction

Smallholder agriculture is the primary livelihood of rural Ethiopia, but unfortunately this has been a major source of the country's high vulnerability to poverty, especially given Ethiopia's propensity for experiencing devastating drought and food insecurity (e.g., 8.3 million Ethiopians are considered chronically food insecure; Devereux & Guenthe, 2009). Nigussa and Mberengwa (2009) reflected that most development studies examining food security in Ethiopia are conducted at the national level, and that there is a need to examine the situation at the local level. The purpose of this qualitative study was to identify and analyze major themes of drought related needs emerging from participatory and rapid assessments of four rural villages in the Tigray Region of Northern Ethiopia.

Data was collected through a combination of Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) techniques, and analyzed by using the constant comparative method, from which emerged eleven themes addressing the research question. The researcher developed a framework of community drought needs in Tigray by placing the eleven emergent themes into three modified sectors of drought vulnerability (Hayes, Wilhelmi, and Knutson, 2004): Economic Diversification, Environmental Management, and Social Coping Mechanisms.

Research Setting

The Tigray region in the Northern Ethiopian highlands is the nation's most drought and famine prone region. The altitude in this area ranges from 2000 to 3500m and, partially due to a rain shadow effect, receives only 600 to 1,000 millimeters of rainfall annually (McCann, 1987). In the past, highland agriculture took place mainly from 2000-3000 meters. However, because of population pressure and soil degradation, farming has shifted in this past century to the frost line areas over 3000 meters and to the malaria/flood prone regions under 2000 meters (McCann, 1987).

Pender and Gebremedhin (as cited in Tesfay, 2006) reported the main economic activity (85% of its employment) in Tigray is rain-fed agriculture at the subsistence level, and a majority of producers farm less than one hectare of land. The major crops of the region are rain-fed sorghum, teff, barley, millet, wheat, and maize (Tefay, 2006). Subsistence production is highly variable as the drought-prone conditions of the land lead to lower levels of input use by farmers (Tefay, 2006).

According to Hagos, Pender, and Gebreselassie (1999), Tigray covers 80,000 square kilometers and is bordered on the north by Eritrea, Sudan to the west, the Ethiopian regions of Amhara and Afar to the South and East respectively. The semi-arid climate of Tigray is dominated by a long dry season (June to September) with short periods of highly variable rainfall distributed between February and April (Tefay, 2006).

Centuries of cultivation, overgrazing, and high population pressure have contributed to the extreme land degradation in Tigray (Mekuria, Veldkamp,

Haile, Nyssen, Muys, & Gebrehiwot, 2007). The drought prone conditions of the land have led to a lower level of farmer input use. Small holder farmers don't want to risk heavy input costs on rains that often don't arrive (Tesfay, 2006). Research from Pender and Gebremedhin, (as cited in Tesfay 2006), shows that only 11% of households in the Tigray region have had direct contact with extension agents, which appears to be more the result of low demand than that of extension services being unavailable.

The above description of agriculture in the Tigray region is consistent with what the researcher experienced during data collection. The primary agricultural system in the study area was one of “integrated annual crop and livestock production in which oxen provide the draught power for plowing smallholders' fields” (Segers et al., 2008, p. 4). Able community members are recruited for food-for-work projects in which free labor is exchanged for cash or food to fill gaps in food consumption. Projects include soil and water conservation activities like terrace building and micro-dam construction.

Mekelle University (MU), located in the region's capital city of Mekelle, constitutes the primary agricultural institution of higher learning in Tigray. MU was established in 1993 to provide education, research, and extension to communities in Tigray, particularly to the drought prone areas, the worst of which immediately surrounds Mekelle. To date, the university has more than 20,000 total undergraduate and graduate students. MU's College of Dryland Agriculture and Natural Resources (CoDANR) has been given the mission to provide academic programs, research, and

community outreach services to support public needs. CoDANR is made up of the Departments of Animal and Range Sciences, Dryland Crop Sciences, and Soil and Water Conservation. The college has set priority research areas based on attaining sustainable development and community impact. Examples of these research priorities include crop water management, pre- and post-harvest crop loss improvement, improving livestock nutrition, and improving demand-driven extension services.

The researcher relied heavily on the local expertise of MU faculty in formulating this study. All research methods were approved for cultural sensitivity and locations accessed through relationships with MU faculty and staff. Their knowledge of local agriculture and community practices was vital for the researcher to conduct this rapid assessment during May and June of 2010.

Conceptual Framework

Miles and Human supposed that a conceptual framework “explains, either graphically or in narrative form, the main things to be studied – the key factors, concepts, or variables – and the presumed relationship among them (as cited in Robbins, 1991, p. 139).

Drought is a complex phenomenon with far reaching consequences, especially for a county like Ethiopia, which resides in the infrastructural poor Global South and is reliant heavily on rain fed agriculture. Therefore, studying the community coping mechanisms and needs related to drought survival requires a limiting framework. Hayes et al. (2004) asserted:

Because drought is a complex issue involving the supply and demand of water resources, and therefore both physical and social characteristics, a conceptual approach to risk assessment can be broken down into a combination of the hazard and vulnerability. (p. 107)

In this instance, hazard meaning the likelihood and severity of a drought event, and vulnerability meaning “what people and sectors may be most affected by drought, why these impacts occur, and if these relationships are changing over time” (Hayes et al., 2004, p. 108). Community needs and vulnerability can be considered equivalent and succinctly defined as measures of susceptibility to the effects of drought. This study will ignore the hazard analysis (frequency and severity of drought) and focus on vulnerability analysis (community susceptibility).

Hayes et al. (2004) deconstructs drought vulnerability analysis into three components: impact assessment, causal assessment, and temporal trends. Because of the rapid nature of this study, the researcher focused on the impact assessment component, which Hayes et al. (2004) described as a drought susceptibility inventory of the social, economic, and environmental sectors. Figure 1 displays graphically the entirety of Hayes et al.’s (2004) framework for drought risk assessment. The black box highlights the three sectors in a drought impact assessment (social, environmental, and economic). During data analysis, a modification of these three sectors proved useful in housing emergent themes related to community drought survival.

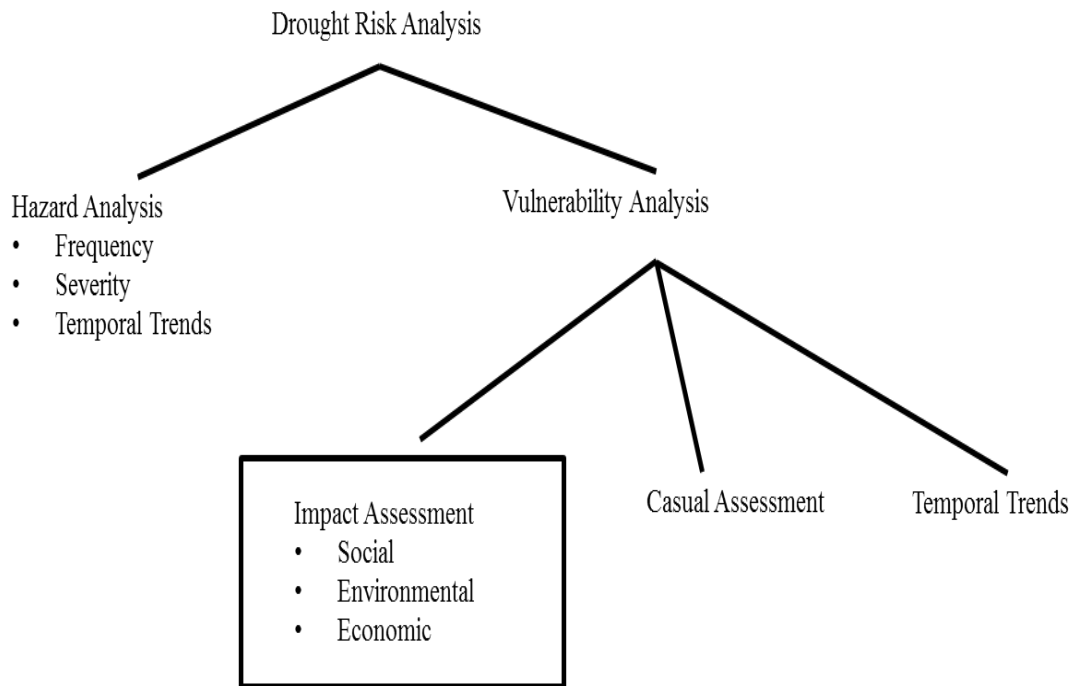


Figure 1. A graphic representation of the drought risk analysis framework. Adapted from “Reducing drought risk: Bridging theory and practice”, by M. J. Hayes, O. V. Wilhelmi, and C. L. Knutson, C. L., 2004, *Natural Hazards Review*, 5(2), p. 107.

Duvel (2002) emphasized that in a developing country, assessing the needs of a smallholder requires an approach that is “priority-oriented, purposeful, effective, and efficient” (p. 82). Etling and Smith (as cited by Dorward, Shephard and Wolmer, 1997, p. 241) defined needs assessment as “the systematic process whereby relevant needs are documented.” The same Dorward et al. (1997) article suggested that needs assessment - in a smallholder farm context - is a diagnosis of farmer problems and can be broken procedurally into two stages: the identification of constraints to the farmer and the appraisal of opportunities or solutions to those constraints.

When conducting rural assessment, Carey and Etling (1997) recommended that researchers:

- Use common sense while keeping the end result in mind.
- Be flexible and adapt the plan to fit the situation.
- Look for opportunistic and unplanned viewpoints.
- Do not rely on a single technique. Instead, triangulate results.
- Further studies should complement rural appraisal efforts.

Carey and Etling's recommendations fit well within qualitative inquiry, particularly when using Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) techniques. Further description of these techniques are discussed in the method section.

Purpose and Research Questions

The purpose of this study was to identify and analyze major themes of drought related needs emerging from participatory and rapid assessments in the Tigray Region of Northern Ethiopia. The main research question of this study is: What are common needs of drought prone villages in the Tigray Region of Northern Ethiopia?

Methods

Population and Sample

This study used theoretical sampling to address the research question. Theoretical sampling is similar to purposeful sampling but does not require that all participants be identified beforehand. Instead, "the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them" (Glaser & Strauss, 1967, p.

45). Analysis occurs throughout the data collection process and further shapes the sample.

Data was collected from four purposively chosen villages near the city of Mekelle, in the Tigray Region of Ethiopia, and from seven Non-Governmental Organization (NGO) project managers, two Government of Ethiopia (GOE) employees, and two university faculty working in agricultural development in the region. Data was collected using the qualitative case study methods (Merriam, 2009). Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) techniques were facilitated at the village level, and interviews were utilized to collect data from the NGO project managers, GOE employees, and university faculty members.

The four villages were chosen based on proneness to severe drought conditions and the researcher's accessibility to the village from Mekelle city limits. Faculty at Mekelle University helped the researcher identify which villages would be most representative of regions in Tigray where drought has the most severe impact.

The researcher made initial site visits to each village to communicate with the local Development Agent (DA) - roughly equivalent to an Extension Agents in the United States. The DA was made aware of the purpose of the research and asked if a representative sample of the village could be organized to participant in PRA and RRA activities. A time, date, and location were specified for the researcher to return and collect data.

Data Collection

PRA and RRA were the primary means of data collection. Robert Chambers (1994) described PRA as a method which “enables local people to share, enhance and analyze their knowledge of life and conditions, to plan to act” (p. 1437). PRA emphasizes empowerment of participants to analyze their own problems during data collection activities. Activities facilitated in this study included community mapping exercises and the creation of community activity calendars. PRA activities allow the researcher to understand the agricultural and cultural contexts of the community, bringing insight into what communities perceived needs are not being addressed. Chambers (1994) outlined the philosophical and practical continuum between PRA and RRA. “An RRA is intended for learning by outsiders. A PRA is intended to enable people to conduct their own analysis, and often to plan and take action” (p. 958). Figure 2 outlines the difference between the two approaches.

Data collected included not only a field copy of the created community calendars and maps, but also participant quotes and conversations that were translated during the facilitation of PRA activities.

RRA activities, such as focus group discussions and interviews were also facilitated. While PRA focuses more on participant empowerment, RRA allowed the researcher to elicit participant experiences and needs regarding drought survival and related topics.

Nature of process	RRA	PRA
Mode	Extractive	Empowering
Outsider's role	Investigator	Facilitator
Information owned, analyzed and used by	Outsiders	Local people
Major innovators based in	Universities	Non Governmental Organizations
Key resource	Local Knowledge	Local analytical skill
Ideal objectives	Learning by outsiders	Empowerment of local people
Longer term outcomes	Plans, projects, publications	Sustainable local action and institutions

Figure 2. The spectrum of RRA and PRA methods. Adapted from “The Origins and Practice of Participatory Rural Appraisal”, by R. Chambers, 1994, *World Development*, 22(7), pp. 958-959.

Questions and activities initially focused on topics common in the agricultural development literature of Ethiopia, but - in accordance with the emergent structure of this research - the questions were adjusted to investigate emerging topics relevant to the research objective. Care was given to allow participants, specifically in the PRA sessions, freedom to control the major topics of discussion. Merriam (2009) summarizes this approach:

The researcher usually does not know ahead of time every person who might be interviewed, all the questions that might be asked, or where to look next unless data are analyzed as they are being collected. Hunches, working hypotheses, and

educated guess direct the investigator's attention to certain data and then to refining or verifying hunches. (p. 169)

Instrumentation

Qualitative research assumes there is no single reality but that knowledge must be constructed and is highly contextualized (Merriam, 2009). Therefore, the researcher is considered the primary data collection instrument. During interviews and focus groups, the researcher used a semistructured protocol formed around general topics discovered in the literature. A semistructured protocol allows the researcher greater freedom in exploring participants' perceived needs and gives the participants more control over the direction of the conversation. The wording and order of questions were not determined ahead of time (Merriam, 2009). See Appendix B for an example of a typical focus group protocol used in this study

Data Analysis

Data collected using Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) techniques will be coded and analysed using the constant comparative method of data analysis. The researcher will form hypotheses to explain the relationships among data themes; unlike other research methods, hypotheses are not formed at the beginning of the study (Merriam, 2009).

Trustworthiness Criteria

Credibility (internal validity) deals with how well the research findings reflect the true reality of the study sample, or how well the researcher interprets the true meaning of the collected data (Merriam 2009). Multiple data collection methods and

data sources were used to triangulate, or cross check, the interpretation of the data. An examination of researcher bias was also be conducted to enhance the study's credibility.

The transferability, otherwise known as external validity, of a study describes the degree to which the study's findings can be generalized to the population from which the sample was drawn (Merriam, 2009). However, the results of qualitative studies are highly contextualized and findings are not formally generalized to a set population. The reader must decide whether the conclusions, results, and implications can be extrapolated to another setting. Patton (2002) describes extrapolation as "logical, thoughtful, case derived, and problem oriented rather than statistical and probabilistic" (p. 584).

In addressing the criteria of reliability (consistency or dependability) - terms describing the degree to which repetition of the research would result in similar findings - in qualitative inquiry, Merriam (2009) said:

Because what is being studied in the social world is assumed to be in flux, multifaceted, and highly contextual, because information gathered is a function of who gives it and how skilled the researcher is at getting it, and because the emergent design of qualitative study precludes a priori controls, achieving reliability in the traditional sense is not only fanciful but impossible. (p. 222)

Reliability, in the qualitative sense, was approached in this study by using triangulation, as described above, along with peer examination and an accurate audit trail (Dooley, 2007) which provided accounts of the data collection process and the forming of thematic categories during data analysis (Merriam, 2009).

The confirmability requirement - that findings are consistent with the data – were met through the audit trail and by conducting an analysis of researcher bias (Dooley, 2007), demonstrating that the researcher maintained neutrality among the participants.

Participants responses were kept confidential via a coding scheme. The codes were designed so that the reader can easily see which method was used to collect the data without knowing the identity or identifiable information of the participant..

Translation

A translator fluent in Amharic (spoken throughout Ethiopia), Tigrinya (the main language spoken in Tigray) and English was hired and used throughout data collection. During interviews and village group activities, the translator would repeat direct quotes to the researcher immediately following the end of a participant's sentence. After the end of each day's research, the translator and researcher would review field notes and transcripts to verify the accuracy of translation.

Coding Schema

To ensure that readers of this study would not be able to connect participant responses to actual participant identities, a coding scheme was developed and will accompany every reported finding of the study.

The phrase V# denotes a particular numbered group of study participants at the village level. A total of six such groups were included in this study. Following the V# tag is a village identifier - A, B, C, or D – delineating in which of the four village locations the participant group was located in. After the village identifier, an underscore and an activity identifier signifying which type of PRA or RRA activity was conducted:

C for community activity calendar; M for community mapping exercise; and D for a traditional focus group discussion. As an example, the first focus group conducted in village A participated in creating both a community activity calendar and map. Participant quotes and information gathered during these two activities were coded V1A_C and V1A_M respectively.

The coding scheme for the eleven interviews consisted of a letter denoting which sector of agricultural development the interviewee worked in (*N* for NGO employee, *G* for GOE employee, and *U* for university faculty) followed by a number separating the interviewees of that sector. As an example, N2 represented the second NGO project manager interviewed as opposed to N3 which represented the third. All information that could be used to identify village group participants or individual interviewees has not been presented or viewed by anyone other than the researcher. Table 2 lists by date the village group sessions and individual interviews conducted during this study.

Table 2

Coding Scheme, Type, and Number of Research Participants

Date	Code	Type	Number of participants
1-Jun-10	N2	Interview	1
1-Jun-10	N3	Interview	1
1-Jun-10	N4	Interview	1
1-Jun-10	N5	Interview	1
3-Jun-10	N1	Interview	1
3-Jun-10	V1A_C	Calendar	9

Table 2 Continued

Date	Code	Type	Number of participants
3-Jun-10	V1A_M	Map	9
4-Jun-10	V2B_M	Map	5
4-Jun-10	V2B_C	Calendar	5
4-Jun-10	V2B_D	Focus Group Discussion	5
13-Jun-10	V3C_D	Focus Group Discussion	8
14-Jun-10	V4A_D	Focus Group Discussion	8
14-Jun-10	V4A_C	Calendar	8
22-Jun-10	G1	Interview	1
22-Jun-10	U2	Interview	1
23-Jun-10	G2	Interview	1
23-Jun-10	N7	Interview	1
24-Jun-10	U1	Interview	1
24-Jun-10	N6	Interview	1
26-Jun-10	V5A_D	Focus Groups Discussion	7
29-Jun-10	V6D_D	Focus Groups Discussion	5

Because of time limitations and the desires of focus group participants, the researcher did not facilitate every activity (calendar, mapping, and discussion) with each village group. The researcher used a guiding principal of rapid needs assessment, do what makes the most sense at the particular moment. For example, if a particular village group did not wish to participate in a community map creation, then the researcher asked if creating an activity calendar would be acceptable.

The researcher continuously read through transcripts and field notes of the PRA activities, farmer focus groups discussions, and interviews. This real time review of transcripts helped to shape questions throughout the remainder of the data collection process. At the end of data collection, the researcher divided responses into the smallest meaningful units possible. These units formed the building blocks in the constant comparative method. Comparison of the units was both reductive and inductive; units were given names, reviewed, combined, and collapsed inductively into themes. Table 3 list of the initial 26 themes, arranged alphabetically, that emerged during this first round of data analysis:

Table 3 *Initial Themes from Data Analysis*

Alternative income generation	Education	Labor
Apiculture	Family	Land
Asset building	Feedback	Livestock
Bylaws	Fertilizer	Market access
Capacity	Finance	Policy
Community labor	Food security	Research
Conservation	Fuel	Water security
Crops	Institutional memory	Women headed households
Dairy	Irrigation	

Critical reflection on the free coded data and further review of the literature were used to expose relationships among the initial 26 free codes and to collapse them into more inclusive themes. Reviewing the literature during the data analysis process aided the researcher develop the conceptual framework which was used to reduce the free codes into 11 manageable themes.

Analysis of Findings

The constant comparative data analysis revealed 28 free codes which were then organized into 11 themes which responded to the research question. The themes were then organized into three overarching need sectors developed from the conceptual framework. Those sectors were Economic Diversification, Environmental Management, and Social Coping Mechanisms. The following section is a narrative definition and exposition of those themes. Whenever possible, participant quotes were used as the primary method to expound upon the themes.

Category A: Economic Diversification

Theme 1: Asset Building

Oftentimes during drought events, rural families typically reliant on rain fed agriculture are not able to produce even at subsistence levels. They must then liquidate their available assets (e.g. a dairy cow) to maintain food supply. One goal of Safety Net interventions in Tigray was to increase rural families' resistance to the effects of major drought events by helping them to build productive assets that would not be detrimental upon liquidation. There are no resources to keep beneficiaries on safety net programs indefinitely, so beneficiaries are encouraged to "graduate" from such programs.

Graduating means that the beneficiary has achieved an adequate level of productive assets, "When people graduate, they use proxy indicators to assess the situation of the household. What they are evaluating is productive assets that can be used at the household. During this process they are expected to develop their assets" (N6).

Graduation was to be achieved through better access to services and investment, "There

is access to microfinances, technical assistance, etc. Gradually the household will develop a productive base and diversity or intensify on one intervention to disperse risk” (N6). “The government is looking to expand financial service opportunities. In the new household asset building program, the government is wanting to encourage savings, credits, value chain development, and increasing market networks” (N6).

Assets can help risk adverse households increase their tolerance for investment risk, “Households are becoming productive. You cannot measure income in rural Ethiopia where every transfer is not traceable, but assets are always there and you can monetize them. We aren’t looking at assets per say, but productivity” (N7). For families that have been able to diversify and build assets, the results are positive.

This has helped improve the resilience of the household. When you face a shock, there is opportunity to lose asset productivity. For instance, bee hives may not make honey in drought. We are integrating the irrigation with fruit, short term and long term crops, trees, multiple composition of livestock so they can monetize easily. Diversity itself is a way of absorbing shocks. (N6).

Theme 2: Alternative Income Generation (AIG)

Diversifying income through alternative income generating activities (AIG) allows community members to resist a sudden breakdown in their primary form of income (mostly rain fed agriculture). Packages include apiculture, irrigation schemes for fruit and vegetable production (N2), dairy, and small ruminant projects. By diversifying rain fed production with “different packages like livestock, poultry, beekeeping,

fattening and the like, we can maximize the output from the labor that we have at each household and each community” (G1).

When comparing AIG developing projects to other aid interventions, an NGO project manager observed, “communities prefer income generating activities” (N2). Beneficiaries of these various AIG packages are asked to “diversify at the beginning, but to specialize after time” (V1_M) in order to develop a market for their product. According to one NGO project manager, AIGs are particularly effective in increasing incomes of rural poor who “don’t have farmland” (V3_D). However “even with all the income generating activities, it is not enough for a lot of families” (V2_D). Beneficiaries are able to sell or consume the products of AIG packages to increase their food security, “They sell their vegetable products and purchase grain to eat” (V1_C); “We cope by eating vegetables that grow on the yard” (V4_C).

In some instance, rural community members have been organized into bee cooperatives for the production of honey. Honey production in the Tigray region enjoys a specialized market niche for its unique white color and taste. However production is highly variable. One GOE interviewee commented on the need for benchmarking honey production in the various villages of Tigray:

We have to put benchmarks. For example, in one area a farmer could get 70 kilograms of honey and in other areas it could be 10 kilograms; so whatever the favorable conditions are that give 70 kilograms of honey need to be listed out and benchmarked. This base practice needs to be scaled up so that the productivity of our inputs can be enhanced. (G2)

Theme 3: Finance

Loans and microfinancing were used at the village level to overcome the negative financial impacts of drought shock events and the resulting lack food insecurity: “When they face this food shortage, they use a solution like taking a loan or microfinance from a wealthy family” (V2_C). The objective of the credit component of safety net interventions in the Tigray region was to “assure food security and reduce poverty” (G1). Along with credit packages, increasing family savings were encouraged by development interventions in rural Tigray. Savings are another tool used to survive with a drought shock, “People are aware that [a drought] may come. For that worst year, they have to have savings so they can cope” (N1). However, these interventions ran into a problem of “convincing the people to save their money, which is mobilized by the local administration, to invest and not spend too much” (V2_C).

Theme 4: Market Linkages

GOE support for product marketing will not always be available at current levels. If marketing linkages are not established and strengthened, there will be no incentive for agricultural production at greater than subsistence levels. “One [solution] would be strengthening private market linkages. Even though [communities] want to do it, they do not know how, especially at the local level” (N6).

A university faculty perspective on value addition and the importance of market linkages was as follows:

The demand has become very clear for processing. There is a strong link right now between the rural and the urban [markets]. You have a lot of production in

the rural areas. All this must be processed to be available at the market. We are not only dependent on agriculture production but also on the value we add. (U2)

Theme 5: Fertilizer Availability

Intuitively, fertilizer as a theme may seem to belong in the Environmental Management Category. However, in the context of agricultural development in rural Tigray, the major barrier associated with low fertilizer use is consistently an economic one: “The cost of fertilizer is very expensive” (V3_D); “Fertilizer is very expensive. It is 800 Birr per 100 kilograms. The price use to be 30 to 40 birr” (V5_D); “We depend on agriculture and the area needs compost fertilizer, but the price of fertilizer is expensive” (V5_D); “If the price of fertilizer decreased, it would be affordable for the farmers to use fertilizer” (V5_D); “When it comes to fertilizer, we expect the government to decrease the price” (V6_D).

Participant farmers not only considered fertilizer too expensive, but the payment required to purchase the fertilizer from the government safety net programs was due prior to harvest, which was a barrier for farmers with little savings or assets (V5_D). According to a university faculty member, “Farmers are using fertilizer or seed not by the recommended rate of the development agent, but on there own” (U1).

Category B: Environmental Management

Theme 6: Food Security

The problem of food shortage is not new in Ethiopia. Even though human life has existed in Ethiopia for thousands of years, feeding the current population is still a daunting task. An NGO participant commented, “You can’t eat history” (N3). Drought

events increase the severity and duration of food insecure periods. Communities in the Tigray region, being highly susceptible to drought events, suffer from seasonal food shortages (V2_C & V4_C). Food shortages malign the goal of asset building because a household is often forced to liquidate their assets prematurely in order to survive a food insecure period (G1). As one village group mentioned, “food can come from Addis [Ababa]” (V3_D), which illustrates the localized nature of food insecurity in Ethiopia. Food is available at the national level, but drought is detrimental to rural markets which are not well linked to national supply chain.

Theme 7: Crop Loss and Production Improvement

In Tigray, drought and unpredictable flooding can increase both pre- and post-harvest loss: “The farmer may lose his production if he can’t separate his crop because of unpredictable rains” (V1_C); “This time there are problems like unexpected rainfall. This can pollute the harvested crops while they are still in the farm” (V2_C); “Unwanted rain can spoil the harvest” (V4_C). Small animals have also burdened cropping systems, as one village group mentioned, “The main problem is that the raised seedlings are eaten by animals and small ruminants, because there is free grazing” (V2_C). These tangible challenges are faced with simple and effective farmer solutions. “To protect the cereals from the unexpected rain, we use plastic sheets to cover harvested cereal crops” (V2_C) and “We pay for a guard to keep the animals and small ruminants away from our crops” (V2_C).

When questioned about future cropping systems in Tigray, one university faculty responded “We need to intensify productivity, but also diversify the system. Instead of

relying on existing crop varieties, we should focus on introducing of high value crops” (U2). There was some capacity in crop improvement practices at the village level. “We plant different types of crops by switching or crop rotation, and by doing observations at each production season” (V5_D).

Theme 8: Access to Land

The major concern among participants is the lack of land availability. All land in Ethiopia is state owned (no private ownership). In villages where safety net interventions are taking place, the GOE divides productive farm land based on family size in each beneficiary household. However, because of increased population pressure, there is a shortage of productive farmland per family, “In the ancient times, there were less people. There were many animals. The land was more than enough” (V3_D); “When it comes to agriculture, the number of population is greater than the land” (V5_D); “In the highland area, land is really small but the population is high” (N4).

Population pressure, drought, and overgrazing have lowered the production capacity of the land, particularly in the Tigray Region. One university faculty member stated, “This land has been cultivated for centuries, therefore the only way to improve it is by improving per unit” (U2). Thus, the agricultural research focus in Tigray is now on improving ‘crop per drop’ agriculture with investments in rainwater harvesting, drip irrigation, and drought resistant cultivars.

Theme 9: Water Security and Irrigation

Simply put, water is a scarce, precious resource in this drought prone region of Ethiopia. “The biggest problem is that there isn’t enough water” (V4_D); “the most

important thing is water” (V3_D). With a country so prone to drought and yet so heavily reliant on rain fed agriculture, it is not surprising that water resources and irrigation techniques emerged from the data. Ground water recharge and availability have felt the detrimental effects of frequent drought, soil degradation from overgrazing, and forest depletion for fuel harvesting. As V3_D stated, “The land needs a lot of water and there is not enough.”

To combat limiting effects of water availability, the GOE and university researchers are encouraging sustainable improvement in “income or productivity per unit of water” (U2). This improvement can be achieved through the introduction of improved technologies (G2) such as rainwater harvesting programs (N5) and the development of a regional seed bank for drought resistant forage seed (U2).

Dam construction and irrigation projects are perceived as the most successful and most needed intervention at the community level. One village group discussion commented that the rain variability would not be a problem if a dam was present in their village (V5_D). One NGO project manager described the different water security projects being implemented in the region: hand dug wells, shallow wells, and rooftop water harvesting (N4). His estimation was that hand dug wells were more effective as a path for increased irrigation and production (N4).

Under the GOE’s massive Food for Work intervention called the Productive Safety Net Programme, community members give 40 days of labor (from January to February) toward water conserving public work projects (N1). Payments for the labor are given to targeted households in either cash or in kind food transfers to bridge food

gaps in chronically food insecure households. Conservation projects completed through the PSNP are aimed at reversing of land degradation and making a long term impact on soil reclamation and water availability (V6_D; G2); the major project in the Tigray region is terrace building on communal land set aside, or closed, for conservation purposes (V1_C). During the 40 days of community labor, PSNP beneficiaries are broken by watersheds to construct stone terraces by hand. Village groups consider terracing a positive project for reversing the effects of water deficit.

Category C: Social Coping Mechanisms

Theme 10: Capacity Building

In order for agricultural development to be sustainable in Tigray “capacity building cannot stop, it has to continue” (G2). As one GOE employee stated, “The basic resource we have is human resource” (G1). The GOE recognizes that high capacity cannot be centralized at the regional level (G2), but must reach the village. Currently, even at the village extension level, the GOE is encouraging an increase in the experience level for the development agents (DAs), “We had development agents who had certificate, 9 to 12 months of education. Currently we have a minimum of diploma holding DAs, and many of them are to be upgraded to the bachelor level, so there is a great improvement of man power” (G2). The NGO respondents were less positive toward to the capacity of those working in agricultural development in Tigray, “The strategies are good, but the implementation aspect is the problem. The implementation capacity is lacking, not in expertise but in other elements” (N3); “Even at the [village] level there is bank of data but there is a lack of capacity to analyze that data” (N6).

An increase in the university research capacity and the influence of agricultural innovation is another area of perceived need by GOE and NGO respondents. One mentioned a need to “act on different research activities, especially in relation to improved agricultural practices with the introduction of improved technologies” (G2). Animal science research was a gap mentioned by one university faculty respondent, “Here, a key point is animal nutrition. Because of the shortage of animal feed, the [food] cycle cannot be completed. We have emphasized crops so much, but we have ignored the animals” (U2). Village groups, however, made no mention of a desire for better research at the university level.

Village level data suggested concerns about the lack of support for community elders, the handicapped, and women. These groups are vital to the family unit, but participants do not see special attention devoted to their unique needs within aid packages (V2_D, V6_D). For example, 30% of households in Tigray are headed by women (G1), but cultural practices in the region prohibit women from plowing. This forces women headed households to purchase male labor, and thus add an additional strain on their income (V3_D).

Both NGO (N3), Government (G2), and university faculty (U1) participants mentioned institutional memory as a problem inhibiting successful community development:

It’s the lack of implementation continuity. We need implementation without interruption. If we have two or three coordinators who want to change their jobs, we may not adapt their replacements to the system because we do not have a

developed system structure. It may take one or two years for the new person to be fit for that position, activities, and other aspects. The vicious circle continues.

(N3)

In some cases, an entire cycle of project implementation can be lost because of the capacity gap between departing and incoming project coordinators must be trained (N3). This problem also weakens interaction between NGO and government administrators, as N3 continued:

We may be working with food security and have developed a nice linkage with government offices. Then we have to start over with the relationship building.

The cycle continues on and on. This lack of institutional memory is a problem in the entire system from the central government down to the [village] level.

Theme 11: Development Policy Structure

To better understand the development strategies of the GOE in Tigray, it is important that the reader understands the administrative structure of the region. NGO participant N4 gave an overview of the implementation structure of a regional safety net intervention:

In Tigray, the administrations go from region, zone, woreda [district], kebele [village], kushet, and then gote - a ten member group. We are using these channels to convince farmers to adopt. The major strategy is through the watershed committees. They have the mandate to administer all aspects of the projects. They are responsible for the sustainability of the project. We train them in implementing and evaluation. Quarterly meetings are conducted. The incentive

is 35 birr per day if the training is at the woreda [district] level. No financial incentive for participation at the kebele [village] level. (N4)

The structure of village level extension was as follows: “The lowest administrative unit is the peasant association, or PA. In each PA there are three to four DAs assigned. One is usually in crops, the other in natural resource management, and the other in home economic” (U1). The major policy of the safety net interventions at the village level was “to fill the gap of food insecurity” (G1). “The safety net program is designed so that people can participate in community work and get payments in terms of grain or cash, so that they will not have to sell their resources” (G1).

Beneficiary farmers have the ability to pick asset building packages from the safety net program that align with their resource base (G1). They must participate in community mobilization projects in order to remain a beneficiary. “Mobilizing means communities themselves developing springs, reducing soil erosion, building hand dug wells” (N4).

The main contention the village groups had with development policy is that enrollment (or quota) of beneficiaries is too low. Even though the safety net intervention is targeted at low income and food insecure households (V2_D), village group respondents reported that households with incomes higher than the cutoff amount still suffer from food insecurity (V2_D). “The quota is only 36,000 [people], so we have no chance to be included in the safety net program” (V2_D).

Conclusions

This study was guided by the following research question: What are common needs of drought prone villages in Tigray, Ethiopia? Data collected through the various RRA and PRA methods were analyzed using the constant comparative method to build emergent themes which addressed the research question.

It was the researcher's goal to bring participant response to the forefront of this study through the reporting of participant quotes. During the data collection phase, the researcher acted as a facilitator, allowing village level participants and interviewees the control over the conversation. PRA activities were employed not only to elicit information from participants, but to empower their own problem solving. By approaching data collection in this manner, the themes of community needs can be considered directly emergent from the perceptions of the research participants.

Regarding the research question, eleven themes emerged addressing drought related needs: asset building, alternative income generation, finance, market linkages, fertilizer availability, food security, crop loss and production improvement, access to land, water security and irrigation, capacity building, and development structure.

Using the literature and conceptual framework as a guide, the emergent themes were organized into three overarching sectors: Economic Diversification, Environmental Management, and Social Mechanisms. Figure 3 integrates the themes and overarching sectors into a framework for community drought survival in Tigray, Ethiopia.

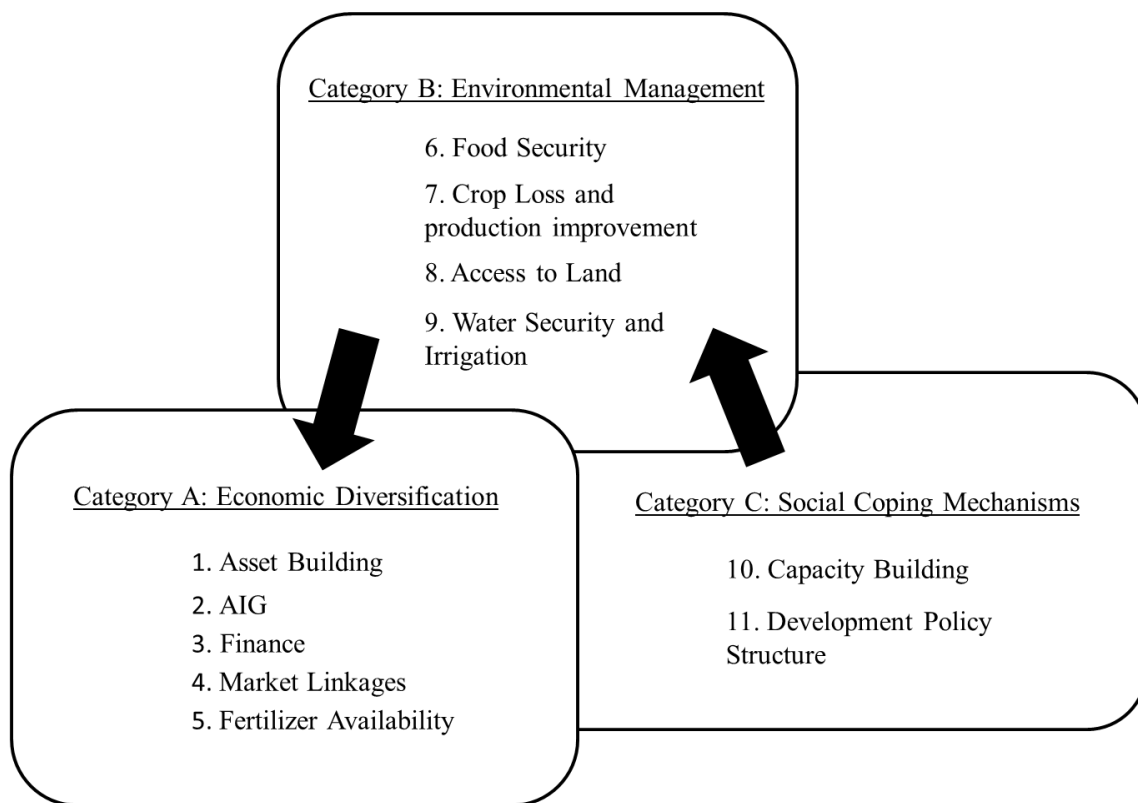


Figure 3. Framework of community drought survival themes in Tigray, Ethiopia.

Interventions which aim to address drought survival needs in Tigray should consider as a foundation, a process for improving the region's social development mechanisms. This includes capacity building at both government administration and household levels. Participatory planning of the intervention's policy structure will aid in proper household targeting and thus relieve the quota limitation.

Building upon a foundation of increased social coping, long term improvements can be made in Tigray's environmental management. While the fruits of this labor come only with time, it is a necessity for increased food security. Focus should be given to reducing crop loss through improved post-harvest technology. Water resource

management will continue to be a key emphasis of any agricultural development in Tigray. Water is precious in Ethiopia, and order to long term irrigation structures to make production improvements, Tigray must continue the patient process of soil reclamation alongside water conserving public work projects. Any increase in food security reduces the likelihood that households will deplete their assets in a drought situation. As social coping and environmental conditions improve, communities may have more ability to diversify their income, which provides an income and investment shield in the case of drought shocks.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The Tigray Region of Northern Ethiopia has faced numerous drought shock events in recent years. Compounding the region's water deficit problem are soil degradation from a history of overgrazing, an increase in population pressure, and chronic food insecurity. These conditions have trapped rural Ethiopian households - whose economic and nutritional requirements are often greater than their rain fed production capabilities - in a vise of cyclic poverty.

The purpose of this study was to assess the food security and drought survival needs of Ethiopian communities in the Tigray region. The researcher approached this through a content analysis of the permanent literature regarding the largest development intervention in Ethiopia - the Productive Safety Net Programme - and through a rapid and participatory needs assessment conducted in four rural villages in the Tigray Region. The content analysis answered what major themes are found in the permanent literature on the impact of PSNP's management policies at the beneficiary level; the participatory and rapid needs assessment exposed the common needs for community drought survival in Tigray, Ethiopia.

Conclusions

Two primary themes emerged in the content analysis which had influence on the PSNP's implementation and impact on beneficiaries. These are Targeting Policy and Transfer Policy. The goal of the PSNP's targeting policy is to ensure that assistance, in either cash or in kind food transfers, reaches households which are truly food insecure.

Factors that limited the success of this policy included poor labor allocation, high administrative bias for political gain, and project administrators being unfamiliar with, or not considering, community input.

The goal of the PSNP's Transfer Policy is to aid beneficiaries in bridging annual food gaps through the distribution of cash or food, in exchange for labor hours spent constructing Public Work projects. The data reflected concerns over the type, amount, and reliability of the aid transfers. If administrators of the PSNP ignore these concerns, beneficiaries may face lower purchasing power and greater risk of experiencing food gaps.

Bridging the findings from the content analysis with emergent themes from the rapid assessment of community drought survival needs, the researcher was able to make several juxtapositions. First, it is clear that asset building plays an important role in the development agenda of Ethiopia. Assets (e.g. livestock, apiculture, petty trade, milk cooperative) give beneficiaries a shield to protect against severe drought or crop loss. The PSNP offers training packages for beneficiaries to choose and learn how to build specific assets. In the case of a drought shock, the productive asset can sustain income streams long enough to bridge the food gaps. However, as the content analysis found, cash transfers can be a misleading asset when food prices or inflation are on the rise.

Second, the rapid assessment found that economic diversification, including alternative income generation, financing, and achieving new market linkages, are important in achieving economic diversification. The content analysis supposes a similar concept of diversification within the Transfer Policy theme. This concept, called index

linking, would essentially diversify a PSNP beneficiary's welfare by offering a combination of cash and food transfers in amounts which are sensitive to local market activity. The researcher theorizes that combining the economic diversification of productive asset building, with index linking from PSNP transfers, would be a versatile approach to income protection. However, as suggested in the data, this would take an extremely high level of administrative flexibility and local capacity.

Recommendations

Reflecting upon the research experience on site in rural Ethiopia, the researcher found that finding a compromise between the goals of PRA (i.e., participant empowerment) and RRA (i.e. eliciting information) can be a useful methodological approach, when attempting a rapid assessment at the community level. Effort must be made to allow participant voice to dominate research findings. It is tempting for a researcher to pick out participant quotes to justify preconceived hypotheses. However, a true qualitative approach will allow hypotheses to address research questions by emerging out of the data and being supported theoretically from the literature.

This researcher found that adequate engagement in the research setting is perhaps the most important criteria of trustworthiness. While the rapid assessment in this study took only four weeks to conduct, the researcher spent much of that time familiarizing himself with the context of rural Ethiopia. As an outsider, unfamiliar with Ethiopia's vast culture, and without personal experience coping with drought shocks or surviving chronic food insecurity, the researcher was forced to ask more 'what' and 'how' questions during the rapid assessments. Ideally, a qualitative researcher would have

more opportunity in understanding contextual, or ‘why’, relationships between participants, as well as their decision processes and perceived needs. This reasoning is why prolonged engagement is so vital in qualitative inquiry. If the researcher was able to spend six months to a year in Ethiopia, the findings would have carried more trustworthiness and weight in reflecting participants’ life experiences, needs, fears, and decisions in coping with drought shock events and food insecurity.

Much of the scholarly research on FFW initiatives is focused on economic impact assessment. There is no doubt that these assessments provide valuable insights into planning, managing, and evaluating development interventions. However, this study has shown that alongside the economic dynamics, there are deeper sociocultural factors affecting the implementation and success of FFW interventions. Additional research in Ethiopia should assess and highlight the ground level truth of household participation in FFW interventions. This study attempted to do so with village level focus groups and administrator level interviews. The content analysis triangulated rapid assessment data with themes emerging from scholarly journals. However, it may prove essential to conduct a longitudinal, qualitative analysis of FFW beneficiary experience, not only at the village level, but at the household level as well.

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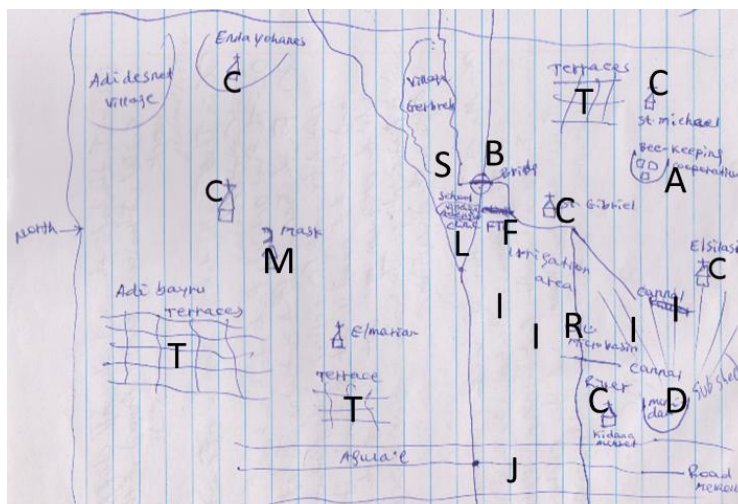
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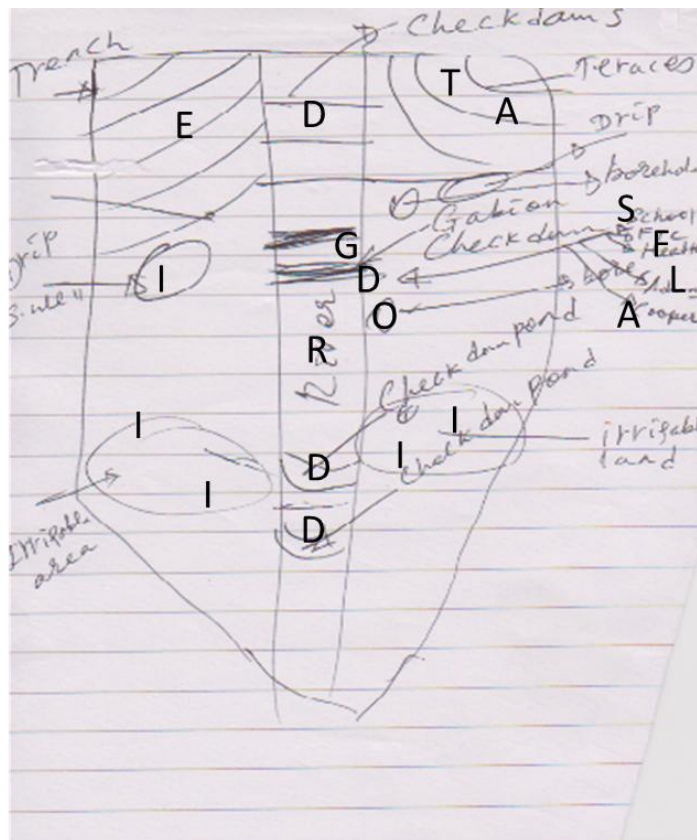
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PRA V2B_M

Key	
T	Terraces
B	Bridge
C	Church
D	Dam
S	School
F	Farmer Training Center
R	River
M	Mosque
I	Irrigated Land
J	Main Road
A	Apiculture Cooperative
L	Clinic
N	Trench
O	Bore Hole
G	Gabion Wire
E	Trench



APPENDIX B

Village Focus Group Protocol

Utilizing Semi structured Interview Technique. All questions are flexible as to order and wording. The researcher will also utilize probing questions when appropriate to extract greater detail from the respondent.

Cover the Information Sheet

Focus Group code:

1. Sex::
2. Occupation(s):
3. Please describe how you became a/an (insert form of employment):
4. Have you been through periods of food insecurity?
5. How did you manage to survive those periods?
6. Do you have suggestions for the community's improvement in surviving similar events in the future?
7. How do you handle transportation of goods to market?
8. How do you store your food? Is storage a challenge?
9. Have you attended any community workshops in order to improve your agricultural practices? If yes, what did you learn?
10. Do you participate in soil and water conservation activities?
11. How do you secure water for your agricultural activities?
12. How about in a drought period?
13. How do you acquire food when there is little rainfall?

14. How do you secure water for drinking?
15. Do you participate in any income generating activities other than rain fed agriculture?
16. If yes, how did you come to participate in these activities?
17. How is agriculture different now than in the past?
18. What are the roles of the different members in your family?
19. Are the family roles different now from what they were in the past?
20. Is the climate/rainfall different now than in the past?
21. Are you a beneficiary of a government or NGO program?
22. If yes, how did you become a beneficiary? Why?
23. If yes, are you offered any incentive to participate in trainings for the program?
24. If yes, what relationship do you have with the program coordinators?
25. How could this program be improved?
26. Do you utilize services from governmental extension agents?
27. Could you describe to me your diet?
28. Does your diet change throughout the year?
29. Have you invented anything to make your livelihood easier?

APPENDIX C

Institutional Review Board Approval Documents

TEXAS A&M UNIVERSITY
DIVISION OF RESEARCH AND GRADUATE STUDIES - OFFICE OF RESEARCH COMPLIANCE

1186 TAMU, General Services Complex	979.458.1467
College Station, TX 77843-1186	FAX 979.862.3176
750 Agronomy Road, #3500	http://researchcompliance.tamu.edu

Human Subjects Protection Program

Institutional Review Board

DATE: 12-May-2010**MEMORANDUM****TO:** COLLETT, RYAN
77843-3578**FROM:** Office of Research Compliance
Institutional Review Board**SUBJECT:** Initial Review

Protocol Number: 2010-0298**Title:** A Pilot Needs Assessment and Strategy Building in the Tigray Region of Northern Ethiopia**Review Category:** Expedited**Approval Period:** 12-May-2010 **To** 11-May-2011

Approval determination was based on the following Code of Federal Regulations:

45 CFR 46.110(b)(1) - Some or all of the research appearing on the list and found by the reviewer(s) to involve no more than minimal risk.

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation or quality assurance methodologies.

(Note: Some research in this category may be exempt from the HHS regulations for

the protection of human subjects. 45 CFR 46.101(b)(2) and (b) (3). This listing refers only to research that is not exempt.)

Provisions:

This research project has been approved for one (1) year. As principal investigator, you assume the following responsibilities

1. **Continuing Review:** The protocol must be renewed each year in order to continue with the research project. A Continuing Review along with required documents must be submitted 30 days before the end of the approval period. Failure to do so may result in processing delays and/or non-renewal.
2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB Office.
3. **Adverse Events:** Adverse events must be reported to the IRB Office immediately.
4. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB Office for review. The Amendment must be approved by the IRB before being implemented.
5. **Informed Consent:** Information must be presented to enable persons to voluntarily decide whether or not to participate in the research project.

This electronic document provides notification of the review results by the Institutional Review Board.

Institutional Review Board Continuation Approval

TEXAS A&M UNIVERSITY DIVISION OF RESEARCH AND GRADUATE STUDIES - OFFICE OF RESEARCH COMPLIANCE

1186 TAMU, General Services Complex
College Station, TX 77843-1186
750 Agronomy Road, #3500

979.458.1467
FAX 979.862.3176
<http://researchcompliance.tamu.edu>

Human Subjects Protection Program

Institutional Review Board

APPROVAL DATE: 02-Aug-2011

MEMORANDUM

TO: COLLETT, RYAN
77843-2324

FROM: Office of Research Compliance
Institutional Review Board

SUBJECT: Request for Continuation

Protocol Number: 2010-0298

Title: A Pilot Needs Assessment and Strategy Building in the Tigray Region of Northern Ethiopia

Review Category: Expedited

Approval Period: 02-Aug-2011 To 11-May-2012

Approval determination was based on the following Code of Federal Regulations:

45 CFR 46.110(b)(1) - Some or all of the research appearing on the list and found by the reviewer(s) to involve no more than minimal risk.

Criteria for Approval has been met (45 CFR 46.111) - The criteria for approval listed in 45 CFR 46.111 have been met (or if previously met, have not changed).

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation or quality assurance methodologies.

(Note: Some research in this category may be exempt from the HHS regulations for

the protection of human subjects. 45 CFR 46.101(b)(2) and (b) (3). This listing refers only to research that is not exempt.)

Provisions:

Comments: Deviation for over enrollment is acknowledged. Study is now in data analysis.




This research project has been approved. As principal investigator, you assume the following responsibilities

1. **Continuing Review:** The protocol must be renewed each year in order to continue with the research project. A Continuing Review along with required documents must be submitted 30 days before the end of the approval period. Failure to do so may result in processing delays and/or non-renewal.
2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB Office.
3. **Adverse Events:** Adverse events must be reported to the IRB Office immediately.
4. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB Office for review. The Amendment must be approved by the IRB before being implemented.
5. **Informed Consent:** Information must be presented to enable persons to voluntarily decide whether or not to participate in the research project.

This electronic document provides notification of the review results by the Institutional Review Board.

APPENDIX D

Cultural Evaluation Letter

 መቐለ ዩኒቨርሲቲ Mekelle University	ቁጥር Ref. <u>CDANR/</u> ቀን Date: <u>08/04/2010</u>
College of Dryland Agriculture and Natural Resources Dean Office	Texas A&M University The Human Subjects' Protection Program <u>Texas</u> Subject: <u>Cultural Evaluation of the 'Needs Assessment and Strategy Building in the Tigray Region of Northern Ethiopia: A Pilot Study' Project</u> This letter is to express our evaluation of the cultural contents and risks of the project on the 'Needs Assessment and Strategy Building in the Tigray Region of Northern Ethiopia: A Pilot Study.' After thoroughly evaluating the proposal and its contents, we have found the project culturally sound and empowering of research participants and honoring partnership. The method of data collection is based on voluntary participation, for the good of the local people and the region at large. It has no effects of what so ever on the culture and dignity of the Tigray people. Besides, the project is well designed to promote sound partnership among the academics of Texas A&M and Mekelle University with clear recognition of common goals and interests and professionalism. The project is in line with the core values and principles of Mekelle University and consistent with the Universities Research Ethics. It also addresses thematic issues within the research and community service priorities of the Mekelle University. To the best of our knowledge and understanding the project involves no risk to the rights and welfare of the participants.
 CDANR ህፃናት ገዢ ግብርናና ተፈጥሮ ሃብት ኮሌጅ ዲን ጽ/ቤት	
ስ.ቁ Tel: +251-034-4-409015 ፖ.ሣ.ቁ. P.O. Box: 231	Together for a Sustainable Development! Email: mu-fdanr@ethionet.et
ፋክስ Fax: +251-034-4-409304 መቐለ ዩኒቨርሲቲ Mekelle, Ethiopia	

VITA

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M.S., Agricultural Leadership, Education, and Communications,
Texas A&M University, 2011