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Public Participation During Reactive, Crisis-Driven Drought Planning Versus Proactive, Preparedness Planning

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Abstract

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MURP, University of Hawaii, 1990

BS, University of New York, 1987

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Droughts are occurring globally and should be recognized as a global issue and drought planning should use a proactive approach on the part of the world community. However, much drought planning, even in developed and highly developed countries, is reactive and programs are often poorly coordinated sometimes with unforeseen negative consequences for marginalized and disenfranchised populations. Literature pertaining to planning strategy for existing, drought crises is nominal and often contributes to patterns of reactiveness and resulting inequity. To gain a better understanding of crisis-driven planning and the participatory process, this gap was viewed through the lenses of institutional analysis and development and procedural justice and fairness. Specifically, this study was designed to determine how procedural justice and fairness, and the institutional analysis and development framework delineates participatory roles during reactive, crisis-driven planning versus proactive, preparedness planning. A multi-case/within-case analysis was conducted. Six publicly-available documents were selected using provisional and sequence coding lists; emerging themes were also identified at this time. The within-case analysis showed discernable differences between reactive and proactive participatory processes. These findings were used to conduct a cross-case analysis; this analysis indicated that commitment to the participatory process and to change were the keys elements in producing fair and just policies. Drought events can be widely divergent and dynamic, no two being alike; however, the spirit of procedural justice must be part of governance that brings public participation within the reactive planning process into better alignment with proactive planning.

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Dedication

For Terry–my loving and long-suffering husband and best friend.

I can never thank you enough for walking beside me during this long journey. The road I traveled was filled with lots of self-doubt and tears, but you were there every step of the way, offering me your steadfastness when I faltered. I love you and share this achievement with you because without you this journey would not have been possible.

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My dear husband, and sons Jeff and Brian and his wife Gina have been my biggest cheerleaders and motivators. My brothers-in-law Jerry, Richie, Mark and Joe and his wife Carol, friends, especially Tom and Bill, and neighbors have been here for me. I was never alone.

"It does not matter how slowly you go as long as you do not stop."

Confucius

Thank you, everyone, for keeping me going when I wanted to stop.

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Chapter 1: Introduction to the Study

Droughts have occurred since time immemorial. However, in modern times, there is evidence that water scarcities are affecting world communities to degrees never experienced before, resulting in food shortages, economic stagnation, and general social turmoil. This is due, in part, to growing and shifting populations and increased agricultural and industrial demands that exacerbate the effects of localized and regional droughts. Waters that are polluted and a lack of water delivery infrastructure have added to this conundrum. While deliberating this turmoil, Larson (2013) emphasized that "2.3 billion people live without access to adequate water supplies. Two-thirds of the world's population, or 5.5 billion people, are predicted to live in areas of 'water stress' by 2025" (p. 2182). Wilson cautioned, "When it comes to food and having safe drinking water, water is not an unlimited resource, and we have to manage it better across the globe" (as cited in Koba, 2014, p. 1).

In addition to locations in the United States, parts of Brazil, Sri Lanka, Colombia, Pakistan, Somalia, Australia, Guatemala, China, southern Europe, and Kenya are just a few of the places suffering severe drought conditions (see Table 1). Galgano noted that recent droughts cannot be disassociated from "cyclical events" (as cited in Koba, 2014, p. 2).

Drought must be recognized for what it is: a global crisis which needs to be proactively addressed by global community. Unfortunately, most responses to droughts have been reactive and involved a crisis management approach. Programs have proven to be ineffective, poorly coordinated, and untimely, and potential effects on disadvantaged

groups have not always been taken into consideration (Wilhite, Hayes, Knutson & Smith, 2000). Because droughts are episodic, marginalized people frequently go through periods without an adequate, clean, and affordable water supply.

Table 1

Summary of Drought Impacts on Select Locations

Locations	Impacts
California[a]	4,700 agricultural workers out of work. Agriculture, gross revenue losses and households will lose income of an est. $603 million in 2016.
Africa[b]	17 countries are besieged by impacts from two years of El Nino caused drought: rising food prices and malnutrition, decreased harvests and livestock deaths. More than 38 million people at risk in 2017.
Australia[c]	80% Queensland in drought. Livestock and agriculture have declined. Country suffering from wildfire outbreaks.
China[c]	Lowest rainfall in southern and northern regions cuts corn and rice yields.
Colombia[c]	New water-rationing regulations in coastal and Andean regions with worst to come.
Guatemala[c]	Declares state of emergency in 16 provinces; crop losses and cattle death affect est. 236,000 people.
Brazil[c]	Worst drought in 84 years; main reservoir less than 13 % capacity.
Pakistan[c]	132 children died in Sindh province in one month because of drought conditions.

Note. [a]Adapted from "Economic Analysis of the 2016 California Drought for Agricultural" by J. Medellín-Azuara, D. MacEwan, R. Howitt, D. Sumner, J. Lund, 2008. Blog post retrieved from UC Davis Center for Watershed Sciences website https://californiawaterblog.com/2016/08/15 /economic-analysis-of-the-2016-california-drought-for-agriculture/. [b]Adapted from Drought in Africa 2017: "Framers, traders and consumers across East and Southern Africa are feeling the impact of consecutive seasons of drought that have scorched harvests and ruined livelihoods" by O. Anyadike, 2017. Integrated Regional Information Networks Newsletter website https://www.irinnews.org/feature/2017/03/17/drought-africa-2017. [c]Adapted from "Global drought real threat to lives and economies: Experts" by M. Koba 2014. CNBC Online website https://www.cnbc.com/2014/09/16/droughts-predictions-are-difficult-on-when-theyll-end.html.

Populations disenfranchised from the public participation process are disproportionately affected, especially during reactive drought planning when they have little or no voice in policy-making. Gabiña, Iglesia, and Lopez-Frances (2007) stated that there must be long-term "sustainable" responses as well as "emergency responses that are planned in advance" and that more proactive actions are needed to protect people "from the most negative effects of this natural event" (p. 12). While the authors spoke of "emergency responses," which might be interpreted to be reactive or crisis planning, in fact, these responses are "planned in advance" not planned in crisis mode.

Pragmatically, to comprehend the nuances of a public participation process, it is necessary to look at who is making these important decisions and who are the beneficiaries, and then to examine the participatory process to determine procedural justice and fairness and the nature of the institution(s) in which they operate. My objective in this study was to explore proactive and reactive planning processes involving public participation and scarce water resources to determine commonalities and differences.

Chapter 1 serves as an overview of the specifics expounded in Chapter 2. The major sections of this chapter include the problem statement and discussions of (a) the gaps in the research literature and how this study was designed to fill in those gaps; (b) the purpose for the study and the research paradigm; (c) the nature of the study; (d) definitions, assumptions, scope and delimitations, and limitations; and (e) the study's significance for the social change–particularly regarding the functions of procedural justice and institutions during reactive drought planning.

Background

Worldwide, myriad laws, directives, and guidelines produce a formidable collage of rules and procedures intended to protect the natural and human environment, and ensure environmental equity for all people; yet, there are still individuals encountering inequities, environmental injustice, and marginalization with respects to natural resources and common goods for lack of fair, meaningful, and collective participatory government. It is not within the scope of this research to discuss the participatory conventions in detail; however, the following is provided for illustrative purposes.

In the United States, environmentally grounded public participation was brought to the forefront in the 1960s. The passage of the National Environmental Policy Act on January 1, 1970, ushered in an era of direct public involvement; however, the act did not guarantee environmental justice and equality. In 1994 President Clinton issued Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which focused not only on inequitable burden, but also on issues of enforcement and public participation. In 1998, the Office of Environmental Justice laid out a standard which called for "fair treatment" of all people.

Directive 2000/60/EC (2000) of the European Parliament and the Council of the European Union established a framework calling for community action in water policy. In 2003, the evolution of Mediterranean Drought Preparedness and Mitigation Planning (MEDROPLAN), a set of guidelines and applications based on "scientific and technical knowledge and adapted to the socio-economic, political and environmental conditions" (p. 5) initiated. The MEDROPLAN addresses both reactive and proactive actions;

however, even reactive measures, adapted in advance to deal with drought situations, were considered "short-term." The thought was that countries would transition to more proactive actions (Gabiña, Iglesias, and López-Francos A., 2007). The following are the objectives set forth in the MEDROPLAN guidelines:

- Moving from a reactive to a proactive approach to fighting drought (preparedness);
- Placing emphasis on the institutional and legal framework and on stakeholder participation;
- Introducing wide range of methodologies to cope with drought;
- Reaching the broadest audience of decision makers and stakeholders, technical and non-technical;
- Introducing the framework of drought management and describing the needed elements of drought management plans;
- Providing scientific and detailed methodology for drought analysis and management. (p. 5)

These objectives showed that advancing from a reactive to proactive planning method, focusing on institutional and legal frameworks and including the widest corpus of stakeholders possible was thought to be essential to drought planning problems.

Wilhite, Sivakumar, and Pulwarty (2014) observed that, globally, current drought management practices have been largely reactive and only treat the "symptoms" or impacts of the drought, rather than address the underlying causes (p. 16). Wilhite et al noted, "What's missing in all the drought talk is advanced planning by political leaders"

(p. 16). Wilhite placed "a lot of blame on governments around the globe for failing to think beyond the last drought" (as cited in Koba, 2014, p. 4).

Even though most states in the United States have drought plans, these plans still rely on reactive, crisis planning. As Fu, Svoboda, Tang, Dai, and Wu (2013) reported, "Most response plans lacked public participation and involvement during both the planning and implementation process. Plans that mentioned public participation were mostly aimed toward educational awareness and did not contain detailed schedules or timelines" (p. 1623). Much of drought planning conducted today, both globally and within the United States, is done in crisis mode with little or no advocacy for meaningful public involvement.

Although there is an impressive amount of literature written about the justice and fairness of public participation and associated institutions in water resource planning and management, researchers have identified gaps in the literature. Gross (2008) noted that research on issues of equity and fairness has mostly been "abstract" or external to social context, which she identified as a "gap" in allocation research (p. 130).

Today's public participation process is problematic to all involved in determining the appropriate process that will produce positive perceptions of fairness and empowerment (Walker, McQuarrie, & Lee, 2015). Walker, McQuarrie, and Lee (2015) suggested that to understand how best to develop specific strategies for how to advance from the state of reactive planning to one of proactive planning without interrupting an on-going process during drought "emergencies," it is important to develop an enhanced conceptual framework that will facilitate evaluation and understanding of the role of

today's public participation practices during extant drought conditions. By conducting a multi-case/across case analyses of reactive and proactive public participation scenarios, and compare and contrast analysis, I sought to fill some of the data gap.

Problem Statement

The following questions served as the groundwork for the research: How is public participation realized when a drought is extant versus when drought preparedness planning done in a proactive mode? Are there structural variables that can account for drought planning being less than just and fair in reactive mode? My goal for this research was to bring reactive planning into better alignment with proactive planning to facilitate a more meaningful and equitable engagement of the public, especially the disenfranchised, during extant drought conditions.

The most effective way to cope with scarce water resources–a common good/common pool–is to employ a proactive approach to public participation. Despite this, when planning and management of water resources during drought conditions are reactive, public involvement in decision-making is not truly "genuine" (Perea, 2008, p. 151). Once again, the literature review provided limited insights for addressing the issue of how to make public involvement genuine during existing droughts. In fact, much of the literature was relegated to citing the successes of contingency planning and proactive planning.

Innes and Booher (2010) argued that if officials do conduct public participation it is only to seek validation of actions that have already been taken. Further, there are agencies that do not communicate with each other, and there is the notion that an agency

alone must develop the right policy without giving the appearance of political involvement. Innes and Booher noted that "as a result, we end up with the Decide, Announce, Defend syndrome (DAD), which wreaks havoc on public engagement with decision-making" (p. 9). Irvin and Stansbury (2004) referred to this as “political suasion”–a strategy in which the government directs the public participation process towards a decision that was going to be made anyway. Genuine empowerment is clothed in the guise of government's ploy of public participation to get the desired public's consensus and support.

Purpose of the Study

This study was grounded in the exploration of proactive and reactive planning processes, and how variables have an effect on the disenfranchised. There are gaps in the research literature, and until there is a better understanding of the impediments of reactive planning on public participation, the populace at greatest risk will remain invalidated. I hope that the insights advance by this study will provide a schema that could be applied to reactive planning and empower all stakeholders including decision-makers, consumers, environmentalists, and financial sectors.

The objective of this research was to evaluate the public participation process during both reactive, crisis-driven drought planning and proactive, drought-preparedness planning to determine the impact of structural variables on procedures. To this end, I conducted a qualitative, multi-case study, and used the data generated to characterize the differences and similarities, and delineate the definable structural variables of two

processes. Additional information about the purposed methodology is available in Chapter 3.

The findings of this study provided a context for a participatory procedure that could be used during reactive, drought planning, and recommend structural variables that would better align the process with proactive planning may, in turn, promote environmental justice for all people. The goal is to empower all, thereby creating a new form of government that allows individuals to be “collaborators" and gives them the ability to engage in institutional decision-making, to suppress rigid bureaucracies and entrenched inequalities” specifically during reactive drought planning (Ostrom, 1990; cited in Walker et al., 2015).

Innes and Booher (2010) contended that, because bureaucratic agencies are hierarchical, they are unable to deal with challenges and rapid change. However, there is an emerging trend that goes beyond the linear model; this is a non-traditional, new form of policy-making. The collaborative model requires that all stakeholders be fully informed and involved in the decision-making process in a meaningful and legitimate way. This is essentially a paradigm shift away from a hierarchical, bureaucratic administration order of governance to a collaborative, democratic administration.

Public participation, "even carried out with best of intentions, is shaped by socio-economic inequality" (Walker et al., 2015, p. 7). While there is neither a shortage of public participation modeling for water resource planning and management, nor is there a shortage of informational material on contingency planning for droughts, there are few

that focus on what to do when a drought is extant, impact are culminating and actions are reactive.

Research Question

I developed the following principal research question to guide this study*:* How do procedural justice and fairness and the institutional analysis and development conceptual framework explain participation during reactive, crisis-driven planning versus participation during proactive, preparedness planning? To help answer the principal research question, I developed following secondary questions:

- Question 1: What is the role of public participation in drought preparedness planning when actions are proactive?
- Question 2: What is the role of public participation when actions are taken during an extant drought in a reactive, crisis mode?
- Question 3: What are the dissimilarities in structural variables when actions taken are in a reactive, crisis mode versus a proactive mode?

Conceptual Framework

According to Ostrom (2011), frameworks are the most general form of conceptual analysis. Frameworks identify elements and general relationships which can be used to compare theories. "They attempt to identify the universal elements that any theory relevant to the same kind of phenomena needs to include" (p. 8). Following this reasoning, two concepts were identified that form the basis for this study: procedural fairness and justice and institutional analysis and development (IAD) framework.

Robert Kuehn (2000) contended that procedural injustice is a key aspect of many environmental justice issues. He stated that procedural justice is the right to equal treatment and respect in the political decision-making process, but that it does not necessarily equate to equal outcomes. Therefore, procedural justice should be focused on the fairness of the process, not the outcomes.

Building on the work of Renn, Webler, and Wiedemann (1995), Webler and Tuler (2000) introduced the fair and competent public participation approach to facilitating a meaningful and empowering process for all stakeholders as part of collective action. Webler and Tuler contended that administrators involved in decision-making are faced with the daunting dilemma of how best to involve the public in the process.

Genuine public participation requires social equality and inclusion, the freedom to have a voice, and political parity. Hart (2003), noting that genuine participation requires social inclusion and good channels of communication across all levels of government and society, stated, “The quality of the process as a means of conflict transformation lies in ensuring that all who have views and grievances have an effective voice, that participation is genuine and not a charade” (p. 9). It seems that public participation in crisis mode is not an actuality but a charade?

Ostrom and Ostrom (1971; Ostrom 1998, 2014) developed the IAD framework as a systematic method of studying how people–as a collective–create institutions to address public dilemmas and prompt decision-making. According to Ostrom (2010, 2014), theorists seldom examine the original construct of an institution or the rules that were applied in forming the structure and rely on the current structure to analyze and draw

conclusions. In the case of public participation, one has to have a historic perspective on the institution to understand the rationale of the process.

Ostrom and Ostrom (2004) posited that, prior to making recommendations of reform, it is necessary “to undertake systematic, comparative institutional assessments” (p. 114). According to the authors, an IAD framework "should identify the major types of structural variables present to some extent in all institutional arrangements but whose values differ from one type of institutional arrangement to another" (p. 114). Innes and Booher (2010) stated that researchers seldom look at institutions in a comprehensive manner to determine "whether different kinds of practices and structure could be more effective …. Our norms for government do not match the reality" (p. 8).

In 1979, Wildavsky, a founder of the discipline of policy analysis, wrote his seminal paper "Citizens as Analysts." Forest (2013), in his redux of Wildavsky's paper, underscored and validated Wildavsky's relative "serene" attitude toward normative issues:

> If it is the case that sound and truthful participation encourages public ownership of institutions, the opposite might even be truer: bogus engagement fosters alienation and diffidence. In a democracy, as Wildavsky (1979) would have insisted, this has deep consequences. When public preferences are ignored, when policy-making is abandoned to 'technicians,' ("Citizens," p. 265) it becomes increasingly difficult to detect failures and correct errors. It is also much less probable that policies requiring consent and individual commitment will succeed. (pp. 6-7)

As express by Forest (2013), the public must perceive that participation is genuine, anything less would result in detachment from the very institutions that support problem solving. The public must feel ownership, it is this ownership that results in sound policy-making and implementation.

Nature of the Study

In this study, I used a qualitative approach to analyze publicly available documents; this did not involve the use of human participants or confidential information. My objective was to conduct a multi-case study of two different public participatory processes, define the differences and similarities, and delineate the definable, structural variables of those processes. I delineated these cases using a synthesis of cases, the number of which I developed as part of the research protocols. Yin (2016) stated that there is no formula for defining the number of data points to be collected in a qualitative study; qualitative data is "intended to maximize information … and no reference to any large population is relevant" (p. 94).

Yin (2009) stated that the most important reason for determining the appropriate research method “is to classify the type of research questions being asked” (p. 10). According to Yin, a case study design should be considered when the focus of the study is to answer *what*, *how* and *why* questions. Evaluating various public participation cases, and the processes they characterize was the core of this study.

Creswell (2013) noted that researchers use case studies to understand and best illustrate a given issue. According to Yin (2009), to determine the appropriate research method, the researcher may need to go beyond a hierarchical approach and instead use an

inclusive and pluralistic one. My multiple case study research was both exploratory and explanatory. As Creswell noted, multiple case studies identify *what* and define *how* a specific subject can be operationally linked and traced over time.

Definition of Terms

I assumed that most terms used in this paper are familiar to researchers in this field of study. However, there are some that have ambiguous meanings or connotations outside the framework of the study. To give readers a common understanding, I offer the following definitions:

Common goods/common-pool resources: Ostrom (2008) defined these as goods or resources characterized by divisibility and that as each person uses them, the use subtracts from the amount available to other individuals. Ostrom noted, "Common-pool resources (CPRs) are sufficiently large that it is difficult, but not impossible, to define recognized users and exclude other users all together" (p. 11).

Disenfranchised/marginalized: Because drought is a global issue, the concept of disenfranchisement used in this study needed to be painted with a broad stroke. Individuals who are ostracized from a decision-making process or institution that determines quality of life should be perceived as being disenfranchised. On a micro-level, that definition becomes convoluted, and depends on the locale for a specific apartheid, that is, the practice for excluding diverse peoples from political, economic, or social opportunities. It was not within the scope of this study to address the issue of apartheid per se.

Developed country: A country with a strong economic base that is highly industrialized and whose citizens have a relatively high standard of living. A country whose governance is conducive to public participation.

Fair and competent public participation: According to Renn, Webler, and Wiedemann (1995), "Fairness refers to the opportunity for all interested or affected parties to assume any legitimate role in the decision-making process. Competence refers to the ability of the process to reach the best decision possible given what was reasonably knowable under the present conditions" (p. 569).

Institution: This concept is ambiguous in nature because individuals use the word in many ways. Polski and Ostrom (1999) stated that laws, policies, or procedures may formalize institutions, "or they may emerge informally as norms, standard operating practices or habits" (p. 3). Institutions provide a structure which enables individuals to come together to engage in collective action to bring about common goals.

Socioeconomic inequality: This is not based on a discrete measure of income or indication of social position. It is the situation or condition which prevents individuals from participating in the political process in a just and meaningful way.

Assumptions

I conducted content analysis of data relevant to proactive and reactive scenarios to develop case studies that identified the circumstances and situations of the planning processes. A logical assumption was that the associated data would be available and that it would be possible to find case studies that parallel the themes/terminology/concepts of both the reactive and proactive planning processes.

It was also assumed that the information postulated in the documents at-hand are not only meaningful to my study, but are also objective, truthful, and trustworthy. Patton (2002) recommended seeking out different sources with similar themes and then determining if the data is well-matched in the way it addresses the subject matter. Having several sources is a technique of sorting out the characteristics of the documentation to assess if they are basically consistent, contradictory, or diversified in substance.

Researchers might be inclined to assume that documents that address similar issues and use similar methodology are comparable; nothing could be farther from reality. There are at least four aspects that effect the essence of a document: (a) the originator, (b) the intention for its creation, (c) the intended audience, and (d) the dynamics of the "actors" (time and place, who or what was the focus, when and where the events occurred). The essence of each document a researcher uses must be ferreted out accordingly.

The data I used are available on-line and in university and public libraries and various other repositories. I primarily drew this information from peer-reviewed journal articles: project reports, various written reports from organizations such as advocacy groups, meeting minutes from involved organizations, applicable government documents, subjective/anecdotal information from trade magazines and newspapers.

Scope and Delimitations

Originally, I had planned to focus on regional drought planning in the United States. However, I decided to look at public participation in drought planning more globally, within other countries. As Larson (2013) observed, "Those who are socially or

economically disenfranchised suffer disproportionately from water stress" (p. 2182). I focused on the procedural justice of the process and institutions, not on a specific country or region.

The issue of equality and justice is often a matter of perceptions of who is getting a fair chance, a fair share, and mutual respect. Yin (2013) stated that the reasons for conducting case studies is to answer *what*, *how* and *why* questions. The what and how of an action may be quite apparent, but the why may not be as clear. At times, the why can only be inferred from the action. It was beyond the scope of this research to analyze *individual* perceptions, and I only focused on antecedent actions. Also, it was outside the scope of this research to addressing specific issues of apartheid.

Limitations

While an assumption was made that documents would address reactive and proactive planning processes separately, unfortunately, this was the situation. Provisional coding was developed to identify commonalities and parallel themes and aid in the determination of availability of comparative documentation. However, it was found that articles usually addressed both reactive and proactive processes in the same document.

Significance

Research gaps have been identified in literature that address the difference between proactive planning and reactive planning, and the role of the public participation process. In this study, I examined water resource planning and public participation scenarios in holistic and systematic terms. The populace disenfranchised from the public participation process is affected disproportionately, especially during reactive drought planning when

they have little or no voice in policy-making. My goal was to bridge the gap between procedural justice and fairness and what is practiced during reactive drought planning and proactive planning. By comparing and contrasting the processes and outcomes of these two different public participation scenarios, I hoped to fill in some of the data gaps by recommending a process that can facilitate a more meaningful and equitable engagement of the public during actual drought conditions.

Summary

In Chapter 1, I offered an overview of the issues surrounding reactive and proactive drought planning and the role of procedural justice and institutions as they apply to public participation. I also offered insights into how the participatory process is not always executed in the best interest of a disenfranchised and marginalized populace. Perhaps most importantly, I noted the gaps in the literature, and defined how this study might resolve the research problem. Chapter 2 includes literature review for the research and supports the constructs introduced in Chapter 1. Because of the interconnectivity of the conceptual framework with the research question and defined research problem, the elements of the framework are discussed in further detail in Chapter 2.

Chapter 2: Literature Review

This literature review provided insight into public participation during reactive, crisis-driven and proactive, preparedness planning. The review reinforced the research questions I presented in Chapter 1: What is public participation? What role does it play in drought planning and policy-making? Do structural variables of proactive and reactive planning processes affect procedural justice and fairness of the processes? I used the findings of this study to develop a context for a participatory procedure that could be used during reactive, drought planning, and to recommend structural variables that would better align the process with proactive planning.

Perhaps most notably, in this chapter I offer an in-depth survey of literature that formed the framework for this research and supported the research questions. I also reviewed materials associated with the conceptual framework. Gaps in the literature identified.

Literature Search Strategy

I conducted a preliminary literature search using keywords in this dissertation's title to determine the availability of documentation. Once completed, I developed a list of search terms using keywords identified in the documents. I used materials that were available on-line, in university and public libraries, and in other various repositories. This information was primarily derived from web sites, peer-reviewed journal articles, books, project reports, written reports from organizations such as advocacy groups, United Nations papers, meeting minutes from involved organizations, applicable government documents, and subjective/anecdotal information from trade magazines and newspapers.

Conceptual Framework

Frameworks

Occasionally, researchers use the terms framework, theory, and model interchangeably, resulting in confusion and communication barriers with other practitioners and researchers. In this study, *theories* specify which components of the framework are relevant to the research questions, they also identify a general set of variables to use for analyses (see E. Ostrom, 2011; Ostrom & Ostrom, 2004). *Models* are descriptive schemas or strategies, including diagrams and flow charts, that elucidate answers to questions based on theories.

Today's public participation process is problematic to all involved, especially for those trying to ascertain the appropriate process that will engender a feeling of fairness, transparency, and empowerment for all participants (Walker et al., 2015). The authors suggested that it is important to develop an enhanced conceptual framework that will enable practitioners to evaluate and understand the role of today's public participation practices during extant drought conditions. Procedural justice and fairness, and institutional analysis and development constitute such a framework.

Procedural justice: Defining the fair process. As defined in NEPA (1970), "Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (42 U.S.C. 4321 et seq).

In 1988, Lind and Tyler introduced the term *procedural justice* to delineate the meaning of fairness in the decision-making process. The authors focused on peoples' interactions in society and their interest in the process rather than outcome. There has been much debate about what constitutes principles of procedural justice in drought planning; however, these are key elements: individuals are given the right to adequate, clean, and affordable water, *commonly held goods,* that are shared for the benefits of the greater populace; everyone is treated on an equal footing and have an equal voice, regardless of who they are; and the population shares the fair distribution of both benefits and detriments.

According to Maiese (2004), "Procedural justice is concerned with making and implementing decisions, [policies] and implementing decisions according to fair processes" (par. 1). People often judge that if a process is fair, in that it is inclusive, treats them with respect and dignity, and has accountability, then the outcomes are more likely to be justifiable (Biermann, 2007; Gross, 2008; Reed, 2008). In support of this view, Rawls (1971) stated that “there is a correct or fair procedure such that the outcome is likewise correct or fair … provided that the procedure has been properly followed” (p. 86).

Based on his philosophies of "ideal speech" and "intersubjective mutuality," Habermas (1996, as cited in Kiss, 2013) contended that legitimate decision can only be reached if there is total acceptance by those affected; it does not depend on the perception of a fair process. However, the author stated that the "ideal speech situation cannot be achieved in reality" (p. 15). Habermas (1979) expounded that ideal speech would only

result when "communicating with another using an agreed upon nomenclature and understanding, shared knowledge, mutual trust, and accord" (p. 3). I focused on the perceived justice and fairness of the process, not outcomes.

Rawls (1971) espoused that “justice is fairness,” but to understand what justice is, it is necessary to understand the concepts of fairness. In early research, Leventhal (1980) specified six criteria for fairness: consistency, unbiased, accuracy, correctability, representativeness, and ethicality. Maiese (2004) offered these four basic criteria: consistency, impartiality, inclusion, and transparency. The United Nations (2009) introduced these eight aspects of good governance: non-government participation, consensus orientation, accountability, transparency, responsiveness, effectiveness and efficiency, equitability and inclusiveness, and follows the rule of law. In 2013, the United Nations reiterated that the key attributes of good governance are transparency, responsibility, accountability, participation, and responsiveness (see United Nations Resolution 2000/64). It appears that fairness and good governance go hand-in-hand. The commonalities are transparency, impartiality/ equitability, inclusion, consistency, and ethicality. It is interesting that these writings span 37 years of insightfulness about good governance and its linkage to fairness.

Robinson (2003) referred to procedural fairness as "natural justice" (p.), that is, the rule against bias and a right to a hearing. He stated that the following two broad, common law rules or rules of law ensure that the valid expectations of the peoples are realized: (a) the decision maker must afford a hearing in appropriate circumstances; and

(b) the bias rule, as Robinson defined it, holds that the decision-maker cannot be biased or seen to be biased by an observer.

Kuehn (2000) speculated that procedural injustice is a significant source of many conflicted, environmental justice issues. The author concurred with Maiese (2004) who stated that procedural justice is the right to equal treatment and respect in the political decision-making process. Habermas (1996) went beyond this, claiming that true legitimacy is only possible by achieving a consensus through dialogue, and that the decision should be acceptable to all whom the decision affects. The concept of perceived fairness of the process does not necessarily determine if there is true legitimacy or not.

Webler and Tuler (2000) introduced one approach for facilitating a meaningful and empowering process for all stakeholders as part of collective action of fair and competent public participation. This was built on a normative theory of justice that forms the foundation for the design of and criteria for evaluating a participatory process. The authors stated that administrators in their study were faced with the perplexing dilemma of how to involve the public in a principled way. Abelson et al. (2003) stated that two norms serve as the criteria by which one could assess objectivity of participation: *Fairness* requires that there are equal opportunities for all to engage in meaningful participation, including establishing procedures within associated institutions; *competence* requires that all participants receive the necessary information and understanding of the issue(s) being considered.

Fairness and the participatory process. Innes and Booher (2004) stated that even legally-required public participation does not guarantee that the basic objectives for

public participation are met. Agencies may seem to be genuinely engaged, however, socioeconomic inequality delineates public input (Walker et al. 2015). Perea (2008) contended that during an extant drought the crisis is already a reality and there is limited time to assess the situation. Often, decision-making cannot be delayed to accommodate stakeholders, if there is public involvement, it is only to seek validation of actions that have been taken. Therefore, Perea reasoned that such public involvement in the decision-making process is not truly "genuine" (p. 151). Reed (2008) recognized that this situation exists in other forms of public participation and stated, "If a decision was already made or cannot really be influence by stakeholders, then participation is not appropriate"(p. 2422).

Genuine public participation required social equality and inclusion, the freedom to have a voice and political parity (Hart, 2003). Hart further stated that genuine participation requires social inclusion and good channels of communication across all levels of government and society; he continued: "The quality of the process as a means of conflict transformation lies in ensuring that all who have views and grievances have an effective voice, that participation is genuine and not a charade" (p. 9).

Irvin and Stansbury (2004) speculated that motivated agencies have no desire to relinquish their decision-making to the public unless by doing so leads to an amenable public. The authors used the phrase *political suasion* to describe this paradigm. Whether engagement truly occurs or not, the most important aspect of political suasion is just how empowered and influential the participants were, because it was they who would champion the government's policy in their community. Clearly, this strategy would not bode well for citizens who have been marginalized. Resolved, discrete procedural

practices or due processes for the disadvantaged and underrepresented might be required to counteract systematic biases by political actors (Eckersley, 2004).

The DAD approach does not promote the exchange of views or the adaptation of new knowledge and, in fact, it imposes all the prejudicial attributes of the hierarchical structure of agencies on the public (Innes & Booher, 2010). These agencies frequently operate in isolation from other agencies, not consulting with or sharing information and presuppose to the entitlement of making autonomous decisions. This is not a positive way to collaborate with members of the community, also, it does nothing to further public competency and trust.

If agencies are engaged in ingenuine practices, these questions should consider: How is public participation to be achieved while a drought is extant, and planning is conducted under less then optimal conditions, when public participation is sometimes short-shifted? Is the quality of just and fair public participation in crisis mode a reality or a mere charade?

Arnstein is a much-cited essayist who was recognized for her writings about the participatory process; this was at the time when participation was just becoming the norm in governmental decision-making. Generally, authors refer to Arnstein's (1969) typology of "the eight levels of public participation" at the beginning of their work as an introduction; however, I found the typology was also a good synopsis of my previous comments.

The rungs of the "ladder" of citizen participation (see Figure 1) range from non-participation, tokenism to citizen power, with each rung further delineated. Although

Arnstein (1969) considered this eight-rung ladder somewhat simplified, she believed that it would make it "possible to cut through the hyperbole to understand the increasingly strident demand for participation" (p. 217).

However, Arnstein (1969) also recognized there were limitations because "the typology does not include an analysis of the most significant roadblocks to achieving genuine levels of participation" and that those roadblocks lie with both the "have-nots" and the "powerholders" (p. 217). One important question needs to be answered: How can/do citizens move between levels, to higher levels of participation?

CITIZEN POWER

8	Citizen Control	Citizens make the most of the decisions–This is the upper level of participation.
7	Delegated Power	Agencies delegated some decision-making power.
6	Partnership	Citizens can negotiation with powerholders, thus distributing the decision-making between the citizens and powerholders.

↓ TOKENISM ↓

5	Placation	Citizens service on advisory committees or boards which have some degree of influence.
4	Consultation	Citizens can listen and be heard, but there is no assumption that their issues will be considered.
3	Informing	Citizens are informed about decisions but have no influence or power to bring about alternatives.

↓ NON-PARTICIPATION ↓

2	Therapy	Decision-makers explain to citizens, usually the marginalized or disenfranchised, why they are wrong and why the chosen decision is the correct one.
1	Manipulation	Citizens serve on "rubberstamp" advisory committees or boards, to "educate" them or foster support. There is no "genuine" citizen participation. The committees or boards usually serve as a "public relations vehicle"–This is the lowest level of participation.

Figure 1. Eight rungs on the ladder of citizen participation. Adapted from "A Ladder of Citizen Participation," by S. Arnstein, 1969, *Journal of the American Planning Association, 35*(4), p. 217.

Discussing marginalization without mentioning Maslow's hierarchical levels misses an opportunity to introduce an important attribute of human desire: the respect from others and the need for meaningful participation in governance (see Figure 2). Maslow's 4th level addresses e*steem,* which includes: achievement, mastery, independence, status, dominance, prestige, self-respect, respect from others (McLeod, 2016). Based on these attributes, marginalization caused by inequality in public participation is not acceptable.

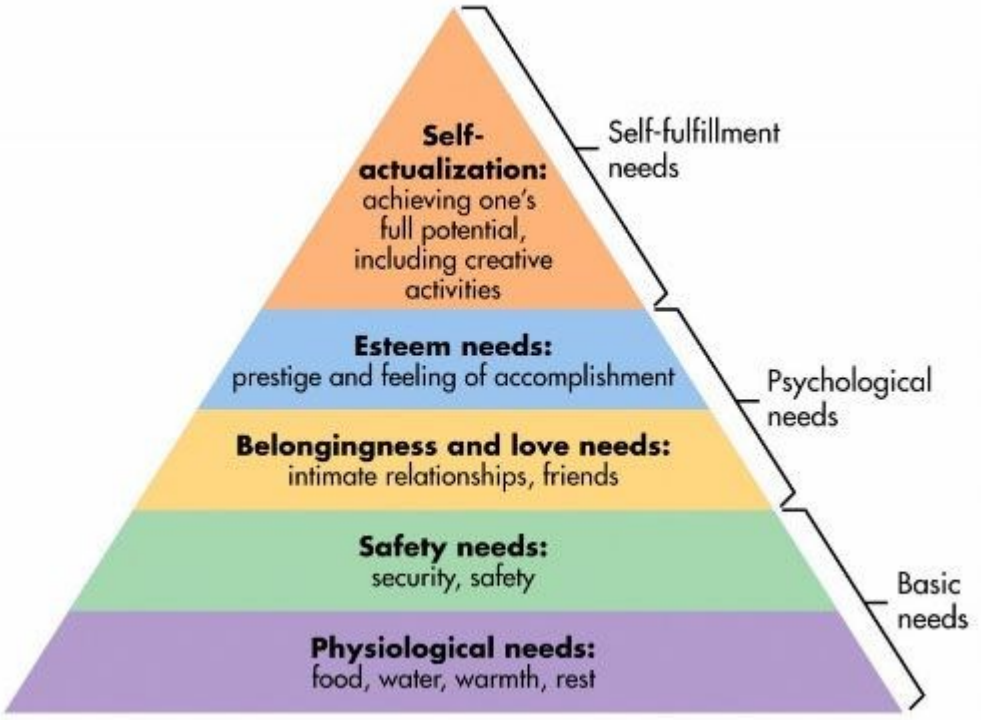

Figure 2. Hierarchy of needs categorized by Maslow. Adapted from "A Theory of Human Motivation," by A. H. Maslow (1943, 1954). In McLeod, 2016, "Maslow's Hierarchy of Needs," p. 2.

Institutional analysis and development (IAD). The IAD framework was developed by Vince and Elinor Ostrom as a systematic method of studying how people–the *collective*–created institutions to address public conundrums and prompt decision-

making in conjunction with CPRs, and how institutions emerged over time (Ostrom & Ostrom, 1971; E. Ostrom, 1998; 2014). A key concept of IAD framework speaks to collective action in respects to CPRs e.g., water resources–planning, management and policy-making (Cairney, & Heikkila, 2014). Özerol (2012) believed that the action by the collective represents the sum of the situational institutions, and influences the actions of the collective as individuals and the relationship between individuals. Further, "participatory rule-making occurs within the institutions of collective action and the institutions of public participation can be inferred from within the institutions of collection action" (p. 144). It is the institutions that enables the collective to come together and to accomplish common goals.

The construct of institutional is straight forth: it is formalized by the "legal, political and administrative structures, and processes through which decisions are made" (Ingram, Mann, Weatherford, & Cortner, 1984, p. 326) and acknowledged by Bandaragoda, 2000; Polski and Ostrom, 1999. Moreover, Polski and Ostrom reasoned that institutions "may [also] emerge informally as norms, standard operating practices or habits" (p. 3)."Institutions can … be conceived as hybrids and consist of not one but a combination of institutions that are new and existing, formal and informal, explicit and implicit" (Hassenforder, Ferrand, Pittock, Daniel, & Barreteau, 2015, p. 997). The ever-changing nature of institutions is adaptable to socio-environmental changes.

Theorists seldom examine the original construct of an institution or the rules that were applied in forming the structure, and rely on the current structure to analyze and draw conclusions. In the case of public participation, one should have a historic

perspective of the institution to understand the rationale of the process (Ostrom, 2010, 2014).

Ostrom and Ostrom (2004) posited that, prior to making recommendations of reform; it is necessary “to undertake systematic, comparative institutional assessments” (p. 114). The authors stated that an IAD framework "should identify the major types of structural variables present to some extent in all institutional arrangements but whose values differ from one type of institutional arrangement to another" (p. 114). Seldom are institutions looked at in a comprehensive method to determine if different practices and constructs would result in improved outcomes. Innes and Booher (2010) contended that if the norms for governance were look at comprehensively, it might be found that they do not conform to reality.

The behavior of the actors is shaped by rules and norms established by the institutions (Cairney, & Heikkila, 2014; Ostrom, 1998). Innes and Booher (2010) extended this thread: traditional, linear governance needs to change because norms no longer correspond with reality; the practice of collaboration is transforming institutions that have relied on hierarchical institutions. The emerging processes can lead to more effective and adaptive institutions, leading to systematic changes that sustain resilience in governance.

The equality and fairness of participation should be measured by the amount of opportunity that is tendered to the stakeholders. It is unrealistic to assume that non-technocratic citizens can mastered all the issues related to water resources decision-making, but there are ways to design institutions and mechanism that facilitates more

competency and affords greater equality (Fiorino, 1990, p. 230). Table 2 illustrates the mechanisms as described by Fiorino.

Table 2

Summary of Mechanisms Under the Participation Criteria

Mechanism	***Direct/Amateurs?***	***Share Authority?***	***Discussion?***	***Basis of Equality?***
Public Hearings	Yes	No	Limited	No
Initiatives	Yes	Yes	Potential	Some
Public Surveys	Yes	Limited	Unlikely	No
Negotiated Rule Making	Unlikely	Yes	Yes	Yes
Citizen Review Panels	Yes	Limited	Yes	Some

Note. Adapted from "Citizen participation and environmental risk: A survey of institutional mechanisms," by D. Fiorino, 1990, p. 230. *Science, Technology, & Human Values 15*(2), 226-243. doi.org/10.1177/016224399001500204

Literature Review Related to Key Concepts and Variables

Key Concepts

Defining drought. Droughts are occurring globally; they are the results of both natural episodes and human activity. Drought, aridity, water scarcity and shortage, and desertification are common in Mediterranean countries and many other parts of the world. There are two basic delineations of drought: *conceptual drought* which is a protracted period of lack of rainfall that could cause damage to agriculture, lower stream flows, deplete municipal water supplies, etc.; whereas the degree of severity defines an

operational drought and its on-set and conclusion. The difficulty here is trying to determine the true nature of a drought, based on substantiated criteria (Ponce, 2004).

Drought terminology is perplexing and muddling even amongst the most expert in the field, it is often misinterpreted, misused or used interchangeably. It is essential to get on an even footing when discussing the issues of drought and water, and its availability. Table 3 provides a simplified illustration of the water availability concept; however, it does not specifically address groundwater depletion, which should be included under "water shortage" since aquifers are major sources of stored water:

Table 3

Basic Model Related to Water Availability

	Natural	**Man Induced**
Temporary	Drought	Water shortage
Permanent	Aridity	Water scarcity Desertification

Note. Retrieved from Ameziane et al., Mediterranean Drought Preparedness and Mitigation Planning. Drought Management Guidelines, 2007, Figure 4, p. 19.

Changing population dynamics, intensified agricultural and industrial demands have the potential to exacerbate the effects of localized and regional droughts–add to this conundrum, waters that are not potable because of pollution and/or lack conveyance infrastructure. By 2025, two-thirds of the world's population is predicted to be living under *water stressed* conditions (Larson, 2013; UN Water, 2012). Whether climate change is intensifying drought conditions remains a matter of contention for some;

however, there is overwhelming evident that water scarcities are affecting world communities to degrees never experienced before. Whatever the cause, it must be acknowledged that drought is a global issue and it must be addressed by the world community in a participatory, proactive and comprehensive process.

Human right to water. Citizens are guaranteed adequate and clean water, common/public goods, by the government as part of *provision rights,* the public trust doctrine, while *participation rights* are proffered as an alternative: As a provision right, the government makes substantive guarantees to provide some minimum quantity and quality of a good or service. As a participation right, the government is legally proscribed from interfering with an individual citizen's access to institutions and resources controlled or held in trust by the state. Consequently, the state is required to facilitate access to those institutions and resources equally and transparently, and is proscribed from interfering with it (Larson, 2013, p. 2181). Unfortunately, as a participatory right, the populace which is disenfranchised from the process is affected disproportionately.

As issues of environmental justice are fretted out, the human right to water has the potential to underscore questions regarding governance and sustainable water for all, especially marginalized and underserved populations. Harris, Rodina, and Morinville (2015) acknowledged that, while there have been advancements in achieving environmental justice as a practice, uncertainties prevail because accessibility to resources continue to be highly unequitable. Marginalized people can still be subjected to an inadequate, clean and affordable water supply, thus overshadowing the "human right to water" principle (Harris, et al., 2015; Mehta, 2006; Parmar, 2008).

One of the possible ways to better comprehend the percepts of water rights is to think of it as a common-pool resource (CPR), and consider the potential and unique opportunities that might pose. For want of any other definition, CPRs are those public goods that are held in common for the wellbeing of the populace–the masses. There are two general aspects of CPRs: exclusionary, the difficulty of limiting or excluding the benefits of the goods from other individuals; and subtractability, that is, the use of benefits lessens the amount available to others (Ostrom, Gardner, & Walker, 1994). Clean water and other natural resources were not always considered a public good, it was often held for the use of the haves and the wellbeing of the greater populace was disregarded in exchange for personal gain for the haves. With the advent of empowering public participation, that mindset is changing.

Defining public participation. When evaluating public participation, it is essential to advance one's understanding of two salient terms, public and participation, since they are the foundation of the paradigm. Bello, Dola, Yumos, Maidin, and Maulan (2013) noted that the definitions of neither participation nor public are universally agreed upon by practitioners. Mackenzie (2008) stated that the absence of consistency in definition and usage of terms could create ambiguity and miscommunications. What is apparent is the divergence of opinions about how public participation is defined, and how do you evaluate it to determine to what end it is meaningful, and empowering, just and fair.

There exists an immeasurable volume of literature that addresses the subject of public participation: some authors are prolific, writing in detail, and others are content

with focusing on some rather obscure subtopic. Rower and Frewer (2004) provided this comprehensive definition of public participation: "Public participation may be defined at a general level as the practice of consulting and involving members of the public in the agenda-setting, decision-making, and policy-forming activities of organizations or institutions responsible for policy development" (p. 512). While this might be relatively one-dimensional, it does cover the major elements of public participation in the decision and policy-making process.

Role of public participation. Bello, et al. (2013) have advanced the theory that public participation is a process whereby individuals who may be affected by an action make a collective decision. The term participation may have different meanings to different people, and this concept is not emphatic, nor does Priscoli (2004) offer the ultimate definition of participation. He voiced this reflection of participation: The key fundamentals of participation should have embraced equality and ethics, "individuals, especially the poor, must not be shut out from participating in those institutions that are necessary for human fulfillment" (p. 2). Concurring with Priscoli, Larson (2013) proffered this: The populace which is marginalized and disenfranchised are unusually affected disproportionately, and are often shut out of the process. While these two statements may be paradoxical, they form the rationale for advocating for the ethical basis of water resource management.

In deliberating the function of the participatory process, Kiss (2014) observed that there were central questions to be answered: Why should the public participate in decision-making? What should the role of public participate in making environmental

decisions be allied to democracy? Kiss believed that public participation in environmental decision-making and implementation was a means of strengthening democracy, it provided legitimacy to governmental processes. To verify this, Kiss conducted a comparative review and analysis of Hungarian literature vis-à-vis public participation, the purpose of which was to survey correlated theoretical approaches.

In her study, Kiss (2014) found that it was environmental issues which had the greatest significance in the democratic decision-making process, more so than any other issues. Also, people wanted to have control over the circumstances affecting their lives and the power to influence them. Further Kiss (citing Király, 2012) stated that, "If people are not given the opportunity to control the decision on their circumstances of life they become passive and apathic" (p. 18).

The International Association for Public Participation (IAP2), as cited in Bonneman (2010), provided these "core values for the practice of public participation":

1. Public participation is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process.
2. Public participation includes the promise that the public's contribution will influence the decision.
3. Public participation promotes sustainable decisions by recognizing and communicating the needs and interests of all participants, including decision-makers.
4. Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision.

5. Public participation seeks input from participants in designing how they participate.
6. Public participation provides participants with the information they need to participate in a meaningful way.
7. Public participation communicates to participants how their input affected the decision (p. 1).

Perhaps the most challenging issue of drought planning is identifying public stakeholders. The National Drought Mitigation Center (2015a) offered this list of potential decision-makers and stakeholders, which are identified as "any enterprise that depends on water needs to be prepared for drought":

- farming, (including aquaculture), ranching, rural communities
- vendors
- municipal water suppliers
- wildfire managers
- environmental organizations, advocates, and agencies
- public health specialists
- hydropower producers
- industry, including producers of biofuels
- tourism and recreation operators
- state, local and tribal governments, and any regional resource management (para. 3).

Since not all possible stakeholders are included, this list is not exhaustive.

Practitioners, administrators, scholars, researchers, et al., while not always in agreement on what public participation was, indicated they knew it when they were involved in it. Looking at public participation pragmatically, some have said it did not matter what the issues were or what the forum was, or who the participants were. Chess and Purcell (1999) observed that the procedure did not determine the success of the process, different forms can result in similar outcomes and some forms can result in different outcomes. The authors further stated: Drawing conclusions about *what works* with regards to outcomes is difficult because of the limited empirical research and great variation in the criteria for success.

The evaluative criterion of public participation, while it may be based on outcomes, is at times contentious among researchers. Bello, et al. (2013) stated that because of the dynamic nature of the process, continuous feedback is needed for "evaluation criteria to have temporal relevance" (p. 10; Polski and Ostrom, 1999). The amount of literature reviewed regarding public participation and the various philosophies about "what works best" validates the statements made by Chess and Purell (1999).

When considering the diverse meanings of public participation, it is easy to understand why a wide-range of connotations and inferences is possible (van Asseldonk, 2012; Lawrence, 2006; Reed, 2008; Webler, & Tuler, 2002). A shared definition of public participation is not necessarily acceded; however, the concept that public participation is a process whereby involved individuals make collective decisions is empirically acceptable (Bello, et al., 2013; Cairney, & Heikkila, 2014; Reed, 2008; Webler, & Tuler, 2002).

Although there are others, McDaniels, Gregory, and Fields (1999), when sharing their experience with advisor panels, related that it was "wise" not to spell out in detail what public involvement was or how it should be managed because further clarity was continuously required as part of the process. Based on this position, public involvement is perceived as a moving target. It is quite realistic that a dynamic, public participation process would bring about new insights and change, and re-clarification would be part of the process.

In 1979, Wildavsky, who was one of the founders of the discipline of policy analysis, wrote his seminal paper "Citizens as Analysts." Forest (2013), in his redux of "Citizens," underscored and supported Wildavsky's relative "serene" attitude toward normative issues:

> If it is the case that sound and truthful participation encourages public ownership of institutions, the opposite might even be truer: bogus engagement fosters alienation and diffidence. In a democracy, as Wildavsky would have insisted, this has deep consequences. When public preferences are ignored, when policymaking is abandoned to 'technicians,' ("Citizens," p 265), it becomes increasingly difficult to detect failures and correct errors. It is also much less probable that policies requiring consent and individual commitment will succeed. (pp. 6-7)

When agencies are responsive to the public, individual commitment to the process and implementation of policies are more positive; however, when participation is perfunctory and not conducted in a straightforward way decision-making and

implementation is a matter of conjecture (Beierle & Cayford, 2002). Perhaps the best one could hopeful for is that actions are not counter-productive.

Beierle (2002) furthered this discussion by adding that the more dynamic the participation was the more likely decisions would achieve the criteria and goals established by the stakeholders. Although studies indicate this is true, they also suggest that "the quality of a decision is strongly dependent on the quality of the process that leads to it" (Reed, 2008). Reed maintained that as a process it needed to emphasize empowerment, equality, trust and learning" (p. 2491). Beierle and Cayford (2002) continued, if agencies only considered the public as an annoyance rather than an asset, the process may well develop into a promotional exercise whereby decision-makers attempt to sell their preferred action(s) to an unapprised public.

If one accepts the premise that public participation is the backbone of democracy and that this process is not serving the populace in a meaningful and empowering way, how can there be justice and equality in the management and distribution of a public goods such as scarce water resources? When there is no true democratic process at work to ameliorate inequity, is there democratic legitimation?

Public participation via collective edict. We have not always been consummated caretakers of the environment; ofttimes economics provided the driving force behind policy-making. To understand the change in perspectives, we need to look back to the environmental events during the 50's and 60's. Citizens of the United States, as well as world citizens, began to realize there were presages that indicated the environment was under siege. Water and air pollution placed the populace and natural environment at risk,

and, persistent unresolved, environment calamities became the rallying call for action. It was by *collective edict* that the populace declared that nothing would be done unless the people demanded solutions.

The 1970's became known as the *environmental decade*–an era of direct, public involvement. In the United States, public policy was formalized by the National Environmental Policy Act (NEPA) [42 U.S.C. 4321 et seq.] 1970. The Act codified the proviso for public participation as a matter of public policy. The one thing it did not guarantee was environmental justice and equality.

The environmental decade, and there afterwards, witnessed a marked increase in public participation. Webler and Tuler (2000) contended that administrators involved in policy-making found that providing opportunities was enough, although, there were circumstances when more complex involvement was called for; this Webler and Tuler (2002) termed "enhanced public participation." To this they assigned two levels: 1) *opportunity for sustained deliberations*, 2) *power sharing* (p. 179). The authors recognized the fact that sustained deliberation was more prevalent with few occasions for power sharing.

This was a new day, not merely for citizens, but also for the governing administrators who found themselves asking: How can we make this work in a timely manner? How can the public engage in sound decision-making without technical knowledge? What is the appropriate forum? Attempts to answer these questions resulted in a propagation of policies, plans, rules, codes and programs. Unfortunately, in many instances, they came about as part of a learning process after-the-fact.

Representation and public participation in collaborative governance. The philosophy of citizen participation is not a new concept. Roberts (2004) denoted that citizen participation dates back to the Greek city-states. Mapuva (2015) indicated that public participation, as a thinking, can trace its roots to Plato's *Republic,* and that Plato's philosophy of equal representation in governance, as practiced today, forms the foundation of democracies around the globe. As may well be noted, governance is not a new or limited philosophy, as an observation, *Google* lists 15,500,000 results for governance, so it's probably safe to say that there is no definitive interpretation of the term governance.

There are untold number of definitions, notions, beliefs, hypothesis, etc. to explain what governance is. Cited here are a few rather basic concepts: Governance is the process of decision-making and the implementation of resulting policies (UN, 2006, 2009). O'Leary, Bingham, and Gerard (2006) defined governance as the ''means to steer the process that influences decisions and actions within the private, public, and civic sectors'' (p. 7). Emerson, Nabatchi, and Balogh (2011) offered this: governance is the "processes and structures of public policy decision-making that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres to carry out a public purpose that could not otherwise be accomplished" (p. 4).

Much debate has gone into developing a definition that is empirically verifiable, yet comprehensive. Stoker (2004) indicated that governance focuses on the collective of both public and private stakeholders to make decisions, not on any one individual (p.

543). For a different twist, Lynn, Heinrich, and Hill (2001) defined governance as ‘‘regimes of laws, rules, judicial decisions, and administrative practices that constrain, prescribe, and enable the provision of publicly supported goods and services’’ (p. 7), with a public purpose. As comprehensive as these definitions might appear, they, notwithstanding, remain ambiguous and inconsistent.

"Good" governance," according to the UN High Commission of Human Rights and UN ESCAP (2009; 2010) is "the process whereby public [politics and] institutions conduct public affairs, manage public resources and guarantee the realization of human rights in a manner essentially free of abuse and corruption, and with due regard for the rule of law" (2006, p. 6). Practicing good governance can empower members of disadvantaged and minority groups to preserve their human rights by ensuring they included and represented in politics and policy-making; “it assures … that the views of the minorities are taken into account and the voices of the most vulnerable in society are heard in decision-making” (UN ESCAP, 2009, Good Governance).

The capacity of the process to engage individuals gauges the measure of success to fulfill the deliverance of human rights. However, “it should be clear that good governance is an ideal which is difficult to achieve in its totality” nonetheless, “actions must be taken to work towards ideal with the aim of making it a reality” (UN ESCAP, 2009, “Conclusion”).

In 1887, Woodrow Wilson wrote "The Study of Administration" in which he called for a "new practical science of administration." He observed that the duty of the government was no longer straightforward, but was becoming more complex with

various "masters." The functions of government were also more challenging and multiplying. As an apposite, hierarchically structured civil service, Wilson envisaged a proficiently, trained bevy of civil servants. Once the populace was being governed, now it was doing the governing; now it was the duty of the government to follow the policies of the nation, not just individuals.

When writing about water resources, Grigg (1985) hearkened back to this earlier age of hierarchical, traditional governance which was carry out by experts and trained civil servants with minimal inclusion of the public input. Even though water resource management was sometimes called a problem-solving or planning process, collectively, it was also very political. Conflicts were a certainty and required a balanced approach to maximize economic, social and environmental benefits. Moreover, an administrator had to apply political power with caution, because to do otherwise would be perceived as "playing politics," despite being done with the public good in mind.

In general, bureaucratic agencies are structurally hierarchical with defined responsibilities and scopes of operations which are strictly ordered by operational procedures or policies (Innes, & Booher, 2010; Wilson, 1887). Further, and considering this perspective, addressing the multi-problems of citizens in a rapidly changing world is indeed challenging at best. Several writers (Hassenforder et al. 2015; Innes, & Booher, 2010; Ostrom, 1990; Walker et al., 2015) have looked beyond hierarchical governance of natural resources, beyond traditional governance, finding that prevailing decision-making practices do not readily rejoin to the diverging world we live in, so that all governed must be *collaborators* who transition away from hierarchical governance to a form of

collaborative governance. Gross (2008) asserted that governance is the most elemental part of the collaborative governance process.

Ansell and Gash (20007) provided a particularly insightful definition of collaborative governance:

> A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative that aims to make or implement public policy or manage public programs or assets. This definition stresses six important criteria: (1) the forum is initiated by public agencies or institutions, (2) participants in the forum include nonstate actors, (3) participants engage directly in decision-making and are not merely "consulted'' by public agencies, (4) the forum is organized and meets collectively, (5) the forum aims to make decisions by consensus (even if consensus is not achieved in practice), and (6) the focus of collaboration is on public policy or public management.

Drought planning: proactive/contingency vs. reactive/crisis. Public participation should employ a proactive planning approach as this is the most effective way to cope with scarce water resources (Perea, 2008). Nonetheless, Wilhite and Pulwarty (2014) observed that, globally, present-day drought management practices were reactive and crisis-based. Since these practices have been largely reactive and not proactive, they have only treated the symptoms or impacts of the drought, rather than the underlying causes.

Wilhite, Hayes, Knutson, and Smith (2000) stated that most responses to global droughts have utilized a crisis management approach and that this scheme has been

proven to be ineffective, poorly coordinated and untimely, and have negative impacts on population groups which were not taken into consideration. Because of the ineffectiveness and frequent unfairness of reactive, crisis-driven based approaches, there has been a growing interest in proactive, risk-based approaches to address a drought crisis more justly and fairly.

Reactive plans are usually limited to knee-jerk responses to a drought event; at most, such plans may consist of a list of actions to be taken when stipulated levels of drought occur (Perea, 2008). These actions are meant to be executed after-the-fac, therefore, the scale of public participation is problematic. Whereas a proactive plan is similar in nature to a contingency plan that looks at "what if"? The goal of is to develop preventative strategies, both short and long term, as well as response action plans. Public participation is vital for scripting a successful proactive plan (Perea, 2008).

Almost all states within the United States have drought plans; however, these plans still rely on reactive, crisis planning rather than a proactive/risk-based approach (Fu et al., 2013). This is the traditional, hierarchical way to address drought planning; that is, to response to an existing drought in such a way that the status quo is preserved, and then deal with the recovery from abnormal events (Fu, Tang, Wu, & McMillan, 2013); whereas, proactive management is focused on pre-disaster planning, contingency, and building resilience. Further, Fu et al. (2013) observed that some plans did not have a public participation element in either planning or implementation process. Plans that did incorporated public participation focused mostly on educational awareness and conservation, not specified schedules or timelines; attention needed to be directed to

connecting participants to the process, not in just planning, but also in the implementation of the policy.

It would seem that much of the drought planning being conducted today, both globally and within the United States, is being managed in crisis-mode. Table 4 presents a summary of the characteristics and limitations of both reactive (crisis) and proactive (preventive/contingency) drought management.

Table 4

Characteristics of the Approaches to Drought Management

	Characteristics	Limitations
Reactive	–Based on the implementation of actions after a drought event has occurred and is perceived. –Taken in emergency situations but not based in a contingency plan.	–Often results in inefficient technical and economic solutions since actions are taken with little time for evaluation optimal actions. –Limited stakeholder participation.
Proactive or preventative	–Actions designed in advance, with appropriate planning tools. –Includes stakeholder participation. –Provides both short and long-term measures and includes early warning systems. –Includes a contingency plan for emergency situations.	–The ineffective coordination and cooperation among institutions and the lack of policy to support and revise the proactive plan may lead to an inadequate planning.

Note: MEDROPLAN (Mediterranean Drought Preparedness and Mitigation Planning) (June 2013).

Figure 3 illustrates a simplified, linear model of a contingency planning process as it is applied to reactive and proactive drought planning. Over the last decade these models have been reordered for water decision-making, or new models have been developed.

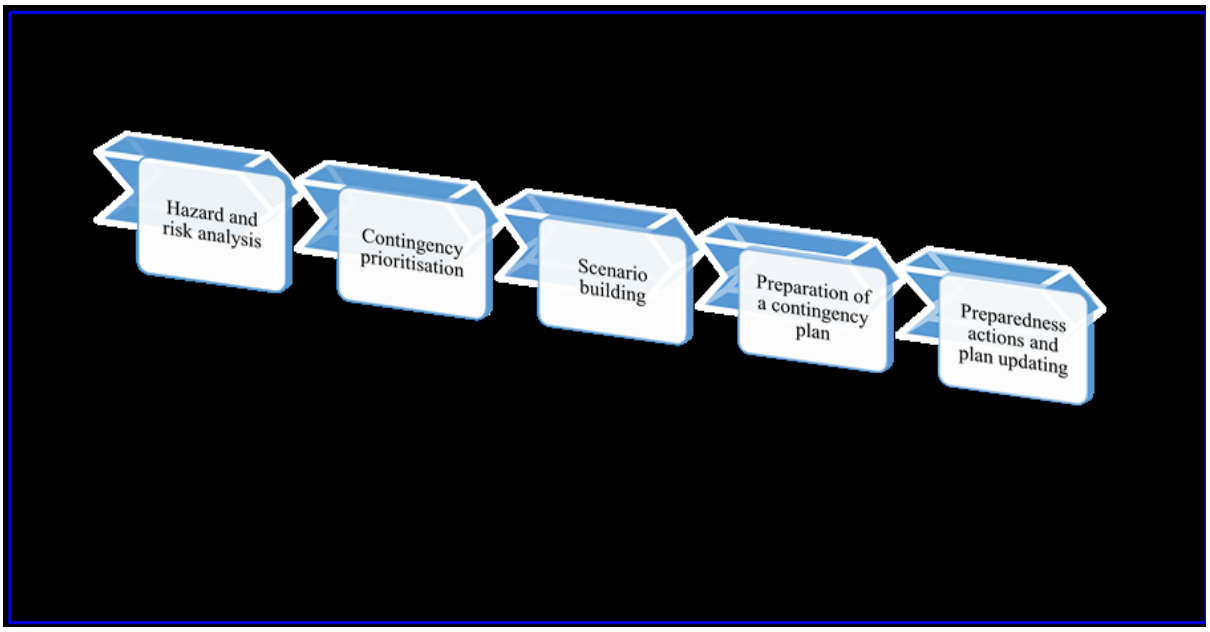

Figure 3. Example of Linear Model for a contingency planning process. Adapted from "Contingency Planning Processes–The Linear Model," by Tole, N., Jetpurwala, Z., &Tejani, S., 2014, p. 8. *Contingency action plan in disaster management*. LinkedIn Learning.

There is no shortfall of informational material on contingency planning for droughts (Drought Mitigation Center, 2015a). Water resources planners and administrators have often borrowed from social, public participation models. Carr, Blöschl, and Loucks (2012) acknowledged that evaluating the results of models is challenging for several reasons: (a) changes do not always correlate to any participation activity, and (b) changes usually develop over time. Moreover, to really understand the nuances of the public participation process, it is necessary to look at who is making strategic decisions and who the beneficiaries are.

Key Variables: Structural Variables

As mentioned previously, Ostrom and Ostrom (2004) stated that the IAD framework needs to identify structural variables, "but instead of looking at all of the

potential variables, one needs to focus in on a well-defined but narrow chain of relationships" (Ostrom 2007, p. 203), because a large number of interacting variables would influence a given collective action (Poteete and Ostrom, 2004). In addition, Ostrom stated that the “complex linkages among variables at multiple levels … affect levels of cooperation and joint benefits” (2007, p. 188).

Just like many terms used in this field of research, it all depends on the institution–the complexity and circumstances of the decision-making process under consideration. This definition was offered by Hassenforder et al. (2015): "[Structural] variables are defined … as elements or criteria used to describe participatory processes" (p. 85); one might go further and think of structural variables as all things that influence collective action–perhaps it might be easier to consider them as part of the world view of participation. Hassenforder et al. offered these five “relevant” variables: natural or environmental elements of the system that the process is targeting; levels of governance involved in decision-making; the on-going history of the decision-making process; prior relationships between the participants, which was considered “critical,” and participants understanding of both the target system, and an appreciation of how values and norms affect the way facts were perceived (p. 86).

Based on a wide-range of theories, game paradigms and computer models, Ostrom (2007) stated that a rather long list of variables can be generated. Ostrom, focused on two distinct sub-sets of structural variables: those that did not depend on a situation being repeated and those, that when repeated, resulted in potential influence of additional structural variables. The first sub-set included: number of participants, abstract

ability or fully shared, heterogeneity of participants, face-to-face communications which strengthened trust, and the shape of production function. The second sub-set included: knowledge about previous actions, and how the participants interact and whether participant can freely enter or leave the participatory process. By 2010, Ostrom eliminated the fifth variable, shape of production, leaving seven to consider.

As observed, the structural variables touted by Ostrom only related to collective action; they did not incorporated variables specific to drought planning, or other natural or environmental systems. While some of the variables or elements put forward by Hassenforder et al. (2015) paralleled those of Ostrom, by including elements of natural or environmental systems to their framework, they were able to foster a deeper insight of the system at issue. These five elements in turned introduce other associated variables.

A comparative analysis of public participation processes using variables will be conducted. In to depart from a traditional top-down process or non-participatory process, Hassenforder et al. (2015) argued that a "comparison diagnosis" needs to be conducted to improve our understanding of elements [variables] as they relate to outcomes. However, Hassenforder et. al. (2015) did not discount conducting in-depth analyses of specific cases, and concluded that these two approaches were complementary. [Of interest is the fact, that while the authors speak to analysis, they reiterated that their "aim … is not analytical but comparative" (p. 86).]

According to Yin (2009), a case study design should be considered when the focus of the study is to answer *what*, *how,* and *why* questions (pp. 8-9). Evaluating various public participation cases and the processes they characterize is at the core of this

study: what happened, how and why are the processes in the cases different or similar. The case study data were compared in order to characterize differences, and delineate definable structural variables between the public participatory processes.

In a general framework, Hassenforder et al. (2015) presented three elements and a list of associated variables for each. Those aspects include: context, participatory process, and outputs, outcomes and impacts. In total, there were 14 variables. These were variables which the authors felt were empirically and inherently related to participation. It is apparent that Hassenforder et al. intended to keep their variables focused and relevant to the target as recommended by Ostrom (2007).

To many public administrators, scholars and practitioners alike, public participation must seem like an enigma. Apparently, that there is no one complete definition/conception of public participation that is agreeable to all; the who, what, when and how are still major matters for debate. Nonetheless, there is very little argument about the objective and, that is, to empower the common citizen who takes part in a collaborative form of governance. Empowerment gives them a voice in equitable decision-making, specifically during reactive drought planning (Ansell & Gash, 2007; Ostrom, 1990; Walker et al., 2015).

Gaventa (2006) provided three views of power: hidden power-political agenda, invisible power-coercion, and visible power-participatory decision-making. The author stated that visible power is "observable" decision-making:

> This level includes the visible and definable aspects of political power, the formal rules, structures, authorities, institutions and procedures of decision-making.

> Strategies that target this level are usually trying to change the who, how, and what of policy-making so that the policy process is more democratic and accountable and serves the needs and rights of people and the survival of the planet (p. 29).

Research Problem and Gaps in the Literature

There is an impressive amount of literature written about public participation justice and fairness and water resource planning and management. Conversely, Gross (2008) denoted that research has mostly been "abstract' or "external to social context," and this has been identified as a "gap" in allocation research (p. 130). Day and Gunton (2003) argued that more research was needed using meta-analyses on larger data sets, focus on key elements that determine success, and determinizing how to prepare for collective planning. Roberts (2003) posited that theory building regarding citizen participation is still in progress–there are no well-developed theories of citizen participation. While there is a large amount of anecdotal information, there has been little or no attempts to conduct a meta-analysis.

Rowe and Frewer (2004) concurred with Roberts stating that the few cases that have been studied have not examined the effectiveness of the participatory process in a structured manner. They also acknowledged, stating that an important step in the development of a theory required understanding individuals' normative beliefs about the process in diverse scenarios.

Larson (2013) also addressed conflicts over scarce and disputed water resources and spoke about the unequitable treatment, further, that a right-to-water, with a procedural remedy, fosters equitable rights and empowerment. The author contended that

further study is needed to understand how public trust relates to participation rights, and how different interpretations of public trust influence the development of participatory rights. It is argued that new approaches are needed to deal with today's issues, especially, considering that participatory rights could "provide a potentially powerful tool for addressing the global water-stress crisis" (p. 2267).

While public participation, as it relates to public goods, has been a requirement for decades, these articles gave credence to the fact that the public participation process has been emerging, because the basic characteristic changes in the nature of the issues being addressed have transformed. These articles proposed strategies that would secure equitable rights to scare water resources, and established trust between the people and the government–justice and fairness.

Modeling and On-going Research

While it is not within the scope of this study to go into depth about modeling, this discussion is included to give the reader an awareness of some of the work being done. There is no lack of interest nor shortage of public participation modeling for water research planning and management; nor is there a shortage of informational material vis-à-vis contingency planning for droughts, i.e. manuals, guidebooks, toolkits, etc. (National Drought Mitigation Center, 2015b). What is missing are specific strategies on how to advance from the state of reactive planning to one of proactive planning without interrupting the on-going process.

Over the last decade these models have been reordered for water decision-making, or new models have been developed. Carr, Blöschl, and Loucks (2012) conveyed that

many models are “outcome” focused and do not evaluate processes. Public participation modeling is still evolving, and more study is needed that will enable administrators to bring equality and fairness into the planning process. Considering the large amount of literature and often conflicting premises, there are big challenges to face.

The increased interest in public participation has resulted in the emergence of a groundswell of modelling focused on specific areas such Water Resource Management (WRM). According to Basco-Carrera, Warren, van Beek, Jonoski, and Giardino (2017), conventional computer-based models employed in the participatory and the decision-making process have not been adequately and scientifically researched (p. 95). Decision Support Systems (DSSs) have been developed to fill this need. For WRM, the challenge is balancing the competing and often conflicting uses and users of water so that the needs of all are met–the question to be answered: how is water security to be achieved (p. 97). The DDS participatory/collaborative model that Basco-Carrera et al. (2017) proposed is a generic framework and can be used by stakeholders, practitioners and decision-makers to evaluate various modelling approaches common to WRM. The authors believed that to demonstrate the applicability to water resources planning and management globally, further research is necessary.

The Shared Vision Planning (SVP) model has been touted by Palmer, Cardwell, Lorie and Werick (2013). The authors emphasized that the approaches to water resources planning have changed during the last decade and continue to develop. SVP is based on what has been learned during this time. One of the reasons given for this is the nature of the projects; planners and administrators are no longer looking at large-scale projects but

are engaged in planning and managing for solutions involving activist stakeholders. The SVP model is intended to be interactive and stakeholder user-friendly. The authors emphasized that a user-friendly model would give individuals a growing comprehension of water resource planning and management, and the ability to address several tactics that had been employed in the past to discourage public participation, such as, poor execution, lack of accountability, undue influence by powerful interest groups, and an increase in the cost of resources.

Together with experts, stakeholders are able to communicate throughout water resource planning decision-making process (Palmer et al., 2013). These authors championed this contention saying that SVP is a model which can speak to the concerns of a broad-range of stakeholder interests and values. These authors were strong proponents for a structured participation process.

Andersson, Olsson, Arheimer, and Jonsson, (2008) stated: "Outputs from scenario-impact analysis put environmental changes into a tangible spatial and temporal perspective" (p. 134). The authors believed that the researchers involved in the modeling process would need to raise both ethical and methodological questions, especially when assigning subjective weights to variables, in order "to strike a fair balance between expert and stakeholder influence over the process" (p. 446). This is crucial to a successful model because the balance of stakeholder groups ensures an increase in the degree of confidence in the model.

Summary and Conclusions

An excellent paper was written by von Korff, Daniell, Moellenkamp, Bots, and Bijlsma (2012) in which they addressed the recent trends in participation research. In one of their closing statements the authors maintained that even though challenges exist, there are expansive opportunities for participatory approaches in other areas such as research. Priscoli (2004) reasoned: “We must find new ways to jointly diagnose problems, to decide on plans of actions, and to implement them” (p. 2). Even though there might be a wealth of subjective information, theory building, and citizen participation is still a work in progress, that there have been little or no attempts to conduct a meta-analysis across contextual case studies (Day, & Gunton, 2003; Roberts, 2003). Rowe and Frewer concurred with Roberts stating that the few cases that have been studied have not examined the effectiveness of the participatory process in a structured manner.

There are still limitations inherent in the participatory process, specifically with reference to the fate of marginalized individuals in the presence of influential stakeholders. How can meaningful and empowering participation be assured? The need for further research to better understand how trust and fairness can be furthered is touted as a forgone conclusion (Larson, 2013).

As noted above, there is opportunity for more research in the field of public participation and modeling that preserve stakeholders' interests. The is undoubtedly more acute for advocating the interests of the disenfranchised during exigent crises, i.e., reactive, drought planning.

Recalling the purpose of this study from Chapter 1, this study was intended to determine whether there are apparent structural variables within the public participation process, during reactive, crisis-driven drought planning and proactive, drought-preparedness planning, which would alter the perception of a just and fair procedure. The data from this study was intended to bridge the disparity between procedural justice and fairness and what is actually practiced by evaluating the participatory processes and conducting a comparative study of the key characteristics. The goal was to bring reactive planning into better alignment that facilitates to a more meaningful and equitable engagement of the public, particularly the disenfranchised, during extant drought conditions.

Chapter 2 has provided a review of the literature empirical foundation and conceptual structure for this study. Chapter 3 outlines and explains the qualitative methodology, and the comparative case study design that I used. In particular, information on how this study was conducted, the process of identifying data sources (relevant documentation), coding, and organizing and analyzing data was discussed. This Chapter also detailed how a content analysis can be used to fill gaps in the research literature

Chapter 3: Research Design and Methodology

The purpose of this study was to determine whether there are apparent structural variables in the public participation process, during reactive, crisis-driven drought planning and proactive, drought-preparedness planning which would alter the perception of what is just and fair. Wilhite et al. (2000) stated that responses to global droughts that have involved a crisis management approach have been proven to be ineffective, poorly coordinated, and untimely, and have negative impacts on marginalized populations. Because of the ineffectiveness and frequent unfairness of reactive, crisis-based approaches, there has been a growing interest in proactive, risk-based approaches to address water crises more justly and fairly, and to create institutions that can adapt to those changes.

My objective in this research was to evaluate the public participation process during both reactive, crisis-driven drought planning and proactive, drought-preparedness planning to determine the impact of structural variables on procedures. To this end, I used a qualitative, multi-case study approach and use the collected data to characterize the differences and similarities between two processes and delineated the definable, structural variables.

Specifically, I employed a multi-case, comparative approach. In Chapter 3, I define and rationalize the research plan for the study. Further, I delineate my role as researcher, not only as the designer and executor of that design, but most importantly, the person responsible for fostering trustworthiness and integrity in the research.

Research Design and Rationale

Based on preliminary research, I developed the following principal research question*:* How do procedural justice and fairness and the institutional analysis and development conceptual framework explain participation during reactive, crisis-driven planning versus participation during proactive, preparedness planning? To help answer the principal research question, I developed the following secondary questions:

- Question 1: What is the role of public participation in drought preparedness planning when actions are proactive?
- Question 2: What is the role of public participation when actions are taken during an extant drought in a reactive, crisis mode?
- Question 3: What are the dissimilarities in structural variables when actions taken are in a reactive, crisis mode versus a proactive mode?

Yin (2009) stated that the most important rationale for establishing the appropriate research method "is to classify the type of research questions being asked" (p. 10). Creswell (2009) maintained that research design needs to take into consideration the nature of the research problem and the issue being addressed. A qualitative researcher is afforded considerable discretion in determining the characteristics of the data to be collected and how they are to be coded and analyzed.

According to Yin (2009), a researcher should consider using a case study design when the focus of the study is finding answers to *what*, *how* and *why* questions. Evaluating various public participation cases and the processes they characterize was at the core of this study. The data that are generated as part of this research were used to

characterize differences and to delineate definable, structural variables between the two different public participatory processes.

To determine the appropriate research method, the researcher should go beyond a hierarchical approach and instead use an approach that is more inclusive and pluralistic (Yin, 2009). Stake (1995) continued, "we want to increase our understanding of the case … we want to make a better acquaintance with the case" (p. 60), and researchers do this by selecting the cases that speak to them.

I developed a conceptual framework using procedural justice and fairness and IAD. In Chapter 2, I described the participation processes in the context of this conceptual framework and the research questions. I analyzed the data from this study to ascertain if there is a way to bridge the disparity between procedural justice and fairness and what is commonly practiced. Specifically, I evaluated participatory processes and assessed associated institutions. My goal was to bring reactive planning into better alignment with proactive planning to facilitate a more meaningful and equitable engagement of the public during extant drought conditions.

Role of the Researcher

Researchers determine what data to use and then make sense of it (Maxwell 2013). In this respect, researchers are the designer of the research and the data are the blueprints. There are no preset formulas for qualitative research such as those in quantitative research; there are no "cookbooks" for qualitative methodology (Yin, 2016). Yin (2016) stated that the researcher must "develop the entire underlying substantive

procedure, such as sorting, coding, combining, and recombining portions of the text" (p. 189).

The data I used for this study are from publicly available documentation from the internet. While I was responsible for selecting data appropriate to the research at hand, there were no participants taking part in the study and thus no conflict of interest.

Methodology

Multi-Case in Contrast to Single-Case Design

In some fields of research, there is a question about whether or not multi-case and single-case study differ in methodologies. Yin (2009) contended that they are just two "variants within the same methodological framework …. the choice is considered one of research design" (p. 53). Yin noted that one of the advantages of using multiple cases is that "the evidence from a multi-case study is thought to be more compelling and robust" (p. 53). However, it requires more resources and takes more time to complete, "Therefore, the decision to undertake multiple-case studies cannot be taken lightly" (p. 53).

Creswell (2013) argued that multiple case studies identify what, and define how a specific subject can be operationally linked and traced over time. The objective of this study was to compare, and contrast two different public participatory processes, define the differences and similarities, delineated the definable, structural variables of the processes, and identify the associated institutions.

Cross-Case/Comparative Analysis

I employed a cross-case synthesis to develop two single-cases: proactive and reactive drought planning, and embedded public participation processes. for this purpose, the cases formed their own focus of study. Each focus-case encompassed multiple, descriptive cases to develop single entities. The single-cases were selected because they offer "contrasting situations." These contrasting, descriptive cases essentially became "a single-case study in which all … become part of some larger, main unit of analysis" (p. 60). This design "represents a strong start toward theoretical [conceptual] replication– again vastly strengthening findings … compared to those from a single case alone" (Yin, 2009, p. 61).

Units of Analysis

Identifying the basic or elementary unit of study or focus unit can be problematic if a case is not unique or not otherwise dictated to the researcher. Therefore, the researcher must question what data is needed to answer the research question(s) and connect to the conceptual framework, where is the data to be located, and how is it characterized. Stake (1995) reasoned that case study is "a choice of what is to be studied," the method does not define the case; and researchers must "concentrate on the case" (p. 443). The researcher must consider whether a single-focus case or a comparison of multifocal cases are more relevant. The answer to these questions help clarify the characteristics of the unit(s) of analysis.

Simon (2009) defined case study as "an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution,

program or system in a 'real life' context" (p. 21). While a case study can involve anything, including issues, events, objects, policies, time periods, and so on, it must be a "single" case. As de Vaus (2001) stated, "there must be a focus" (p. 225; see also Frankfort-Nachmias & Nachmias, 2008; Patton, 2002; Yin, 2009, 2016).

In this study, I relied on publicly-sourced documents to develop a comparative analysis of two single-cases: proactive and reactive drought planning, and public participation processes. For this purpose, the cases formed their own focus of study. Each focus-case encompassed multiple, descriptive cases to develop single entities. In other words, as Yin (2009) stated, the descriptive cases "become a single-case study in which all … become part of some larger, main unit[s] of analysis" (p. 60).

Data Collection Method and Data Sources

Drought planning evaluations, as part of case studies, are usually conducted after-the-fact and are typically event-driven. Therefore, I conducted content analysis of data germane to reactive and proactive scenarios to develop two case studies that identified the circumstances and situations of the processes(see Yin, 2009). Patton (2002) recommended using triangulation, seeking out different sources with similar premises, and determining if the data is used to interpret the subject matter using similar approaches.

Primary documents in social research. A perusal of how-to books on qualitative research has found limited emphasis on primary document research as a means of gathering data. Prior (2003) suggested that those that did, focus on authenticity and reliability of text, not use and function for research purposes. Most qualitative research

guides focus on observations, interviews and surveys, and instrument writing, not on document analysis.

Documents, records, archives, and other written data have traditionally been referred to as material culture by anthropologists. "In contemporary society, all kinds of entities leave a trail of paper and [muted] artifacts … which can be mined as part of fieldwork" (Patton, 2002, p. 292). Patton indicated that these data contained "rich" information, thus, supports triangulation. According to Bowen (2009), "document analysis is particularly applicable to qualitative case studies–intensive studies producing rich descriptions of a single phenomenon, event, organization, or program" (p. 28-29; citing Stake, 1955; Yin, 1994).

Data sources. To facilitate a preliminary document search, a pre-coding schema that involves identifying key words will be developed. Bazeley (2007) related that by starting a project with what is known about the subject of the research "is a well-established practiced" (p. 41). A search of the World Wide Web was conducted to identify apposite documents. Data were available on-line, in university and public libraries, and various other document repositories. This information could be derived from:

- peer-reviewed journal articles
- project reports
- various written reports from organizations such as advocacy groups
- meeting minutes from involved organizations
- applicable government documents

- subjective/anecdotal information from trade magazines and newspapers

An assumption has been made that appropriate data would be available. Because two different processes were to be compared and contrasted, it was necessary to find case studies that parallel the premises of both reactive and proactive planning processes. Prior (2003) maintained: "Systematic review procedure requires the use of data extraction protocols … applied to all 'cases' [to prevent selecting] only data which fits a preconceived notion … and to ignore the negative cases" (p. 157). Part of the challenge of this study was to develop protocols and procedures that will assure parallel premises.

Data Coding

Patton (2002) proposed that developing a classification or coding schema was the "first step of analysis" (p. 463) without this there would be "chaos and confusion" Imagine having several hundred data points sitting on a desk waiting to be coded and analyzed without knowing if any emerging themes were developed since the onset of the research. Again, this is when on-going coding is important; this allows the researcher to re-connect to the conceptual framework and research question(s) and search for new paradigms.

There are three relevant aspects that must be remembered about codes: they can occur at any level of the analysis, at any time and, most importantly, they bring everything together to promote analysis–*data condensation* (Miles, & Huberman, 1994; Miles, Huberman, & Saldaña, 2014). This notion of data condensation is noteworthy: to compress the data, one must break apart the data and then bring it together again to

analyze. Yin (2016) stated that the "ideal interpretation will connect the ideas of interest … with your reassembled data" (p. 234).

Advantages and Disadvantages of Pre-Coding

The objective was to develop categories or themes that were paralleled to the case studies being investigated, that is, to develop *operational definitions* based on the conceptual framework, and protocols and procedures that would achieve this. This simplified reliability in data collecting and coding and prevented extensive screening of cases that, would in effect, result in a "mini" case study (Yin, 2009, 2013).

Miles and Huberman (1994) acknowledged that researchers faced two challenges: *data overload,* for which conceptual frameworks and research questions were the best defense, and *data retrieval,* which is embedded in overload and the massive amount of data that has been collected. Yin (2009) stated that a good starting point is to “play” with the data to manipulate data into a preliminary order. This is where coding and iterative reflection should become ongoing as each “wave of data*”* is collected.

The only disadvantages of pre-coding might also be said about coding in general; one of the most important points, to remember it is not the end-all. The researcher needs to remember not to become complacent; pre-coding, in fact, all coding must be tested with every new wave of data collected. A researcher should not become myopic; the myriad of CAQDAS (computer-assisted qualitative data analysis software) available today can make relatively short work of coding.

Data Analysis Plan

The ability to see patterns or themes in data is called *pattern recognition;* content analysis requires the researcher to find repeating patterns (Patton, 2002). Prior (2003) had this to interject: "Content analysis on its own, however, will be insufficient to highlight the full pattern of referencing between objects cited in the text. Reference therefore needs to be studied in context" (p. 122); therefore, "context is not the most important feature of a document" (p. 28). Furthermore, the pattern recognition process must encompass more than just numbers, it must embody an expert analysis of the 'facts' and 'categories' to be considered.

Prior (2003) stated that the simplest form of content analysis is enumerating the frequency of select words, phrases or categories. While this approach is valuable, it takes a well-defined framework to have function. The data which is created only becomes "insightful" when the function of the document is determined (p. 21).

Yin (2009) provides four options for analyzing case study data; two are specific to this study: theoretical [conceptual] propositions, which is preferred, and case description (p. 130-131). Since drought planning evaluations are usually conducted after-the-fact and are event-driven, documents pertinent to proactive and reactive scenarios were analyzed to develop case studies which identified the key elements of each process. (Yin, 2009; 2016). The basic research design involved performing a document search and analysis specific to public participation in water management and planning decision-making, both in reactive and proactive modes (see Figure 4).

Qualitative Data Analysis Process

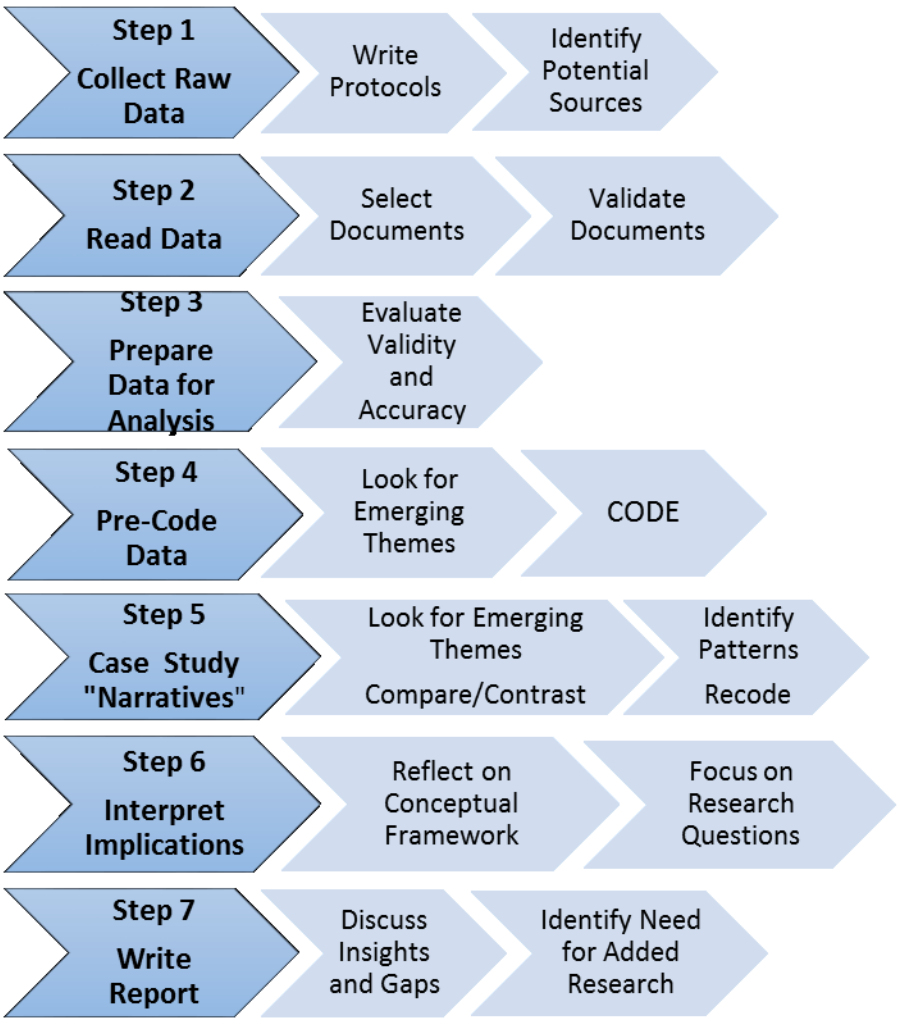

Figure 4. A systematic analytical process for qualitative research and associated elements.

Because a large amount of data that would be collected in development of the case studies, a Computer Assisted Coding software was explored. However, Yin offered this caution: *"You have to do all the analytic thinking.* You will have to instruct the software every step of the way ... you cannot call upon a preset formula" (2016, pp. 188-89; emphasis in original text, see also Yin, 2009). Lastly and perhaps most

fundamentally, "you must defend the logic and validity of the entire operation" (Yin, 2016, p. 189).

HyperRESEARCH (HR) was the preferred CAC for this project. It is fully cross-platform, and has multi-media capabilities and allows for sharing of data (Hyper RESEARCH, 2016)and specifically developed for qualitative research in fields applying various approaches. Silver and Lewins (2013) provided this information: It enables coding and retrieval of resource data, comparing and contrasting, and theme development to analyses of the data. HR "uses codes assigned to parts or cases and files … the case-based focus of the software frames results by case not by document" (p. 296). CAC is advised when large amounts of data are to be retrieved and analyzed; however, the amount of data collected for this research did not generate a large data base.

Issues of Trustworthiness

Trustworthiness

The notion that qualitative research can be evaluated solely based on *trustworthiness* (or authenticity) might seem surprising. When a researcher considers qualitative research as an approach, the first question often asked: Does this research convey confidence in all its suppositions? case study, qualitative research has moved away from a positive approach; now researchers are thinking in terms of trustworthiness (Bowen, 2005; Denzin, & Lincoln, 2005; Padgett, 1998; Patton, 2002, 2012; Yin, 2016).

Trustworthiness is a paradigm in and of itself; it is a conglomerate of strategies, tests and criteria. If one of these elements falls short or is missing, without supporting evidence to the contrary, the trustworthiness of the research is at risk (Denzin, & Lincoln,

2005). Yin (2016) reflected that a credible study validates the data that has been collected and interpreted aptly, and that the conclusions reflect the subject matter and existing body of knowledge. Padgett (1998) recommended that four elements be considered in response to postpositivism:

- *Credibility* is the degree of fit between respondents' views, and the description and interpretation.
- *Transferability* refers to generalizability, not of the sample (as in quantitative terms) but of the study's findings.
- *Auditability* [or dependability] means that the study's procedures are documented and traceable … [they] should have a logic that makes sense to others.
- *Confirmability* is achieved by demonstrating that the study's findings were not imagined or concocted but, rather, firmly linked to the data (pp. 180-181).

There were no human "respondents" involved in this study. This eliminated several internal validity issues, i.e., respondents' saturation or prolonged contact; cultural and personal perspectives, loyalties, politics, etc.

Data was coded, collected and sorted; the logic and validity of selected data was established, and emerging themes and patterns identified while focusing on the conceptual framework and research questions. Although it was not the objective to generalize (transfer) the findings of this study to other situations; because the premise is based on processes relative to solving a common-goods problem, an analogous adaption could be created.

Credibility rests on the shoulders of the researcher, skillsets such as: personal understanding of the subject matter, the ability and steadfastness to foster trustworthiness of the research in such a way that it supports the validity and reliability, and the analysis and interpretation are required. As part of coding, I used a strategy of analyzing themes that parallel the case studies, that is, I developed operational definitions, and observe protocols and procedures to sustain validity. This maintained external validity or transferability.

Padgett (1998) stated that evaluation standards are only applied to competed studies, not design strategies. Strategies are employed during studies to ensure quality and objectivity. The author stated that, "few, if any, qualitative researchers would argue against taking specific actions to ensure … high quality, but disagreements arise over what those actions should be" (p. 180). Quality and trustworthiness might be an ambivalent term to some researchers; however, the focus on quality and trustworthiness must start even before the design is developed, this imparts a certain amount of flexibility in coping with unforeseeables.

Ethical Procedures

Ethics is a fundamental factor in determining the validation of research, whether it be professional conduct or treatment of human subjects. Countless articles have been written about research ethics; the most important issue involves the treatment of participants, the other centers around professional matters. Creswell (2009) stated that ethical issues in qualitative research can occur during all phases of the research process.

This can happen anytime from "prior to conducting the study [to] publishing the study." (see Creswell, 2009, Table 3.2, pp. 58-59.)

Issues of professional ethical generally involved research misconduct and undisclosed biases. Research misconduct can range from omitting or manipulating data to plagiarizing and falsifying research results, and anywhere in between, all of which compromises the validity of the research. Personal bias can be an ingrained part of research, especially qualitative research, it is a problematic issue.

Because researchers can become entrenched in their work, they need to remain cognizant of any personal bias that might creep into their research. I have taken part in several public participations processes, and have observed many more, some were result-oriented, and others were confrontational to the point where the police had to intervene. It would be naïve, and it would be illogical for me to claim that I have not somehow been influenced by these incidences. As a cautionary note: A researcher must remain circumspect.

Research involving the collection and analysis of data involving the treatment of human subjects must be approved by Walden's Institutional Review Board (IRB); however, the research data in this study only consisted of case studies collected from publicly available sources. Research involving literature searches are exempt from most requirements; still, concurrence of the IRB had to be obtained.

Another ethics issue worth mentioning is undeclared sponsorship–research studies undertaken at the bequest of a private entity, i.e. a corporation, professional organization:

Who is paying for the study? Who will benefit from it? It would be highly unethical not to disclose the benefactor of any research study.

Summary

Chapter 3 detailed the qualitative method and data analysis plan that was to be used to capture raw data and to analyze the findings on which recommendations for change and future research were based. Chapter 4 presented the findings and interpretations of the research and the results of the content analysis relevant to proactive and reactive scenarios and public involvement.

Chapter 4: Results

The objective of this qualitative research was to determine whether there are structural variables in the public participation process during reactive, crisis-driven drought planning and proactive, drought-preparedness planning, which could alter a just and fair procedure. Because of the ineffectiveness and frequent unfairness of reactive, crisis-based approaches, there has been a growing interest in proactive, risk-based approaches to address water crises, and to create institutions that can adapt to those changes.

The purpose of this study was to evaluate the public participation process during both reactive, crisis-driven, drought planning and proactive, drought-preparedness planning to determine the influence of structural variables on procedures. To this end, I conducted a cross-case, comparative study and used the data to characterize the differences and similarities, and to delineate the definable, structural variables of the two processes.

The following principal research question evolved: How does procedural justice and fairness and the institutional analysis and development conceptual framework explain public participation during reactive, crisis-driven planning versus proactive, preparedness planning? To help answer the principal research question, the following secondary questions were developed:

- Question 1: What is the role of public participation in drought preparedness planning when actions are proactive?

- Question 2: What is the role of public participation when actions are taken during an extant drought in a reactive, crisis mode?
- Question 3: What are the dissimilarities in structural variables when actions taken are in a reactive, crisis mode vs. a proactive mode?

I analyzed the data from this study to answer the research questions and to devise recommendations that would bring reactive planning into better alignment with proactive planning. This would facilitate a more meaningful and equitable engagement of all shareholders, especially the disenfranchised, during extant drought conditions. Recommendations are provided and further discussed in Chapter 5.

In Chapter 4, I provided information about using document analysis as a research tool, the data collection schema and analysis processes, and findings based on the analyses. Since qualitative research has caused more researchers to think in terms of trustworthiness (Bowen, 2005; Denzin & Lincoln, 2005; Padgett, 1998; Patton, 2002, 2012; Yin, 2016), Chapter 4 specifically covered issues of ethics, credibility, transferability, dependability, and confirmability.

Methodology

Yin (2009) wrote that a case study design should be considered when the focus of the study is to answer *what*, *how,* and *why* questions. In this study, I assessed reactive and proactive approaches to drought planning to understand what happened, how the public participation processes were different or similar, and the reasons for those differences or similarities. I used two methods in this multi-case study: within-case analysis, and comparative cross-case analysis (see Figures 5 and 6).

MULTI-CASE, WITHIN-CASE

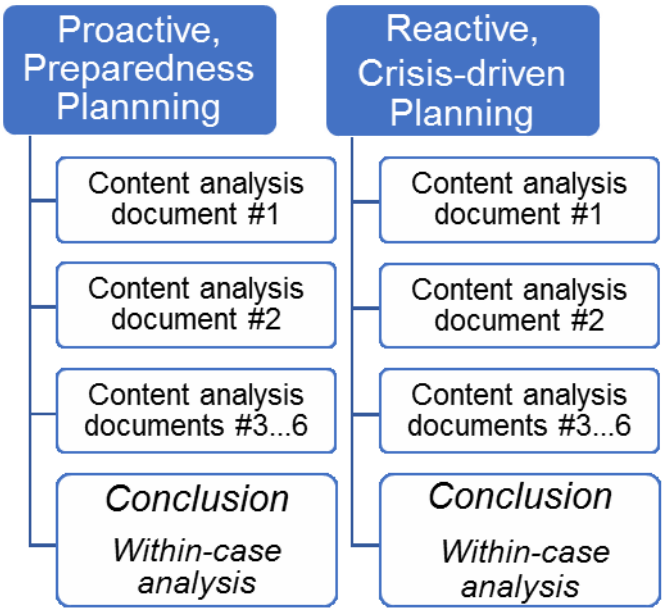

Figure 5. Multi-case, within-case analysis.

CROSS-CASE ANALYSIS

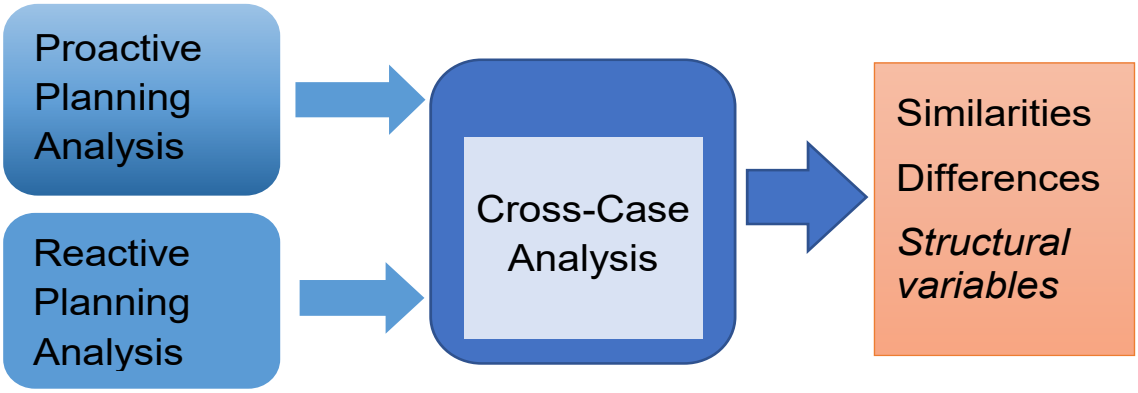

Figure 6. Cross-case analysis–similarities/differences.

Document Analysis as Research

I used a qualitative document analysis (QDA) for this study. As Bowen (2009) noted, "Document analysis is particularly applicable to qualitative case studies–intensive studies producing rich descriptions of a single phenomenon, event, organization, or program" (pp. 28-29). QDA is more than a numbers game; the objective is to correlate conclusions to the contents of the documentation from which they were drawn. The task of the researcher in QDA is to make meaningful interpretations to answer the research question(s).

Documents are created for a specific purpose and have situational context (Charmaz, 2014; Prior, 2003). As Charmaz (2014) observed, "The genre and form [type] of a document as well as any written text in it draw on particular views and discourses…. Written texts…explore, explain, justify, and/or foretell actions" (p. 46). According to O'Leary (2014), "pre-existing documents are treated as a primary source of data" and it is important for the researcher to "consider the issue of subjectivity" (p. 250). To bolster the objectivity and trustworthiness of this study, I developed a précis of documentation worksheet (Appendix A) for each document I used. This was provided as an alternative to an annotated bibliography.

Data Collection

Data Sources

At the inception of this research, I assumed that suitable data were available. Several possible sources were identified in Chapter 3. I found that the data were readily available using these sources: Walden University and University of Wollongong

Libraries, Google Scholar, ResearchGate, Academia, Bing, and Dogpile. Only publicly available documents were collected and analyzed for this study; no confidential data or human participants were used.

Source Availability

While researchers have recommended conducting "pilot studies" to refine data collection plans (Yin, 2009), these were typically used for case studies involving participants. Even though participants were not used as part of this study, I reasoned that it would be advantageous to determine the availability of relevant documentation via a provisional "start list." Several documents were selected using this list; a brief reading of document abstracts and keywords offered useful insights that indicated a strategy for follow-on research. While some researchers might have proposed writing and applying in-text coding to these documents, I took no further action at that time.

Documents are not written with the same research agenda of secondary researchers, and they will thus not always provide the necessary level of information or provide all the necessary data. Some of them will impart a small amount of useful data or maybe none at all (Bowen, 2009). This is where the skills of the researcher are tested.

Document Selection

Documents, records, and other written data have traditionally been referred to as "material culture" by anthropologists. The purpose of this research was to assess the processes and programs associated with drought planning, and its relation to public participation and institutions. Therefore, I decided to select and analyze drought planning case studies or comparable "accounts." Because the documents were artifacts from

different countries, disciplines, and organizations, my use of the term *case study* is somewhat atypical.

Upon further review, I found that the selected documents addressed both reactive and proactive drought planning aspects; in fact, this was frequently the subject of the articles. I opted to focus on each document from these two perspectives, and then to evaluate the quality of the information and its usefulness for answering the research questions. Once this was completed, the remainder of the text was reviewed for emerging themes. This represents a minor departure from the approach discussed in Chapter 3.

In selecting the number of documents to be used for this research, I considered the array of articles available and associated with various time periods, locations, and circumstances. My original intent was to select three documents for *each* process that was going to be analyzed; however, it was necessary to modify this approach. A total of eight documents were initially selected, however, I eliminated two because they did not adequately address the research questions (see Appendix A).

All the selected documents were published within the last 7 years. While 7 years might be considered dated, the existence of a drought and its impact(s) are not always realized for several years after the initial event begins. For example, the information regarding "Day Zero" for Cape Town, Africa, is reactive and based on an existing crisis, but articles come from various news sources, not scholarly sources. That said, 7 years allows for an in-dept, retrospect analysis not readily available at the recognized onset of a reactive crisis.

Gläser and Laudel (2013) wrote that it is necessary to identify and locate relevant data during the data collection process. Seeking out and using diverse studies having similar premises and interpreting the subject matter using similar approaches facilitates triangulation (Patton, 2002). Because two different processes were to be parsed, compared, and contrasted, it was necessary to locate data that contained corresponding suppositions of both reactive and proactive planning processes in the documentation.

The corpus of available, relevant documentation was considerable; therefore, a method of selection was needed. Yin (1981) stated, "data collection must be guided by some type of protocol [because] … the case study investigator's main task is to ascertain whether the different sources converge on a similar set of facts" (p. 105). Prior (2003) stressed that the criteria for including or excluding documents in a data set should be defined in advance. Figure 7 specifies the procedures for selecting documents.

Purposeful, Document Selection Guidelines

A total of eight documents which addressed both reactive and proactive processes, concurrently, were initially selected in accordance with the provisional "start list"–search words (Miles, Huberman, Saldana, 2014, p. 81). This approach was used to filter documents from the various search engines.

Each selected document was published within the last seven years.

Each document contained a case study or account addressing drought planning in an economically, *developed* or *highly developing* country as classified in the *World Economic Situation and Prospects 2018 Report* (UN/DESA, 2018).

The country had a system of governance, at the relevant planning scale (e.g., village, local, regional, river basin), which was conducive to a public participatory process.

The eight selected documents were further culled according to their ability to answer the research questions; six were ultimately chosen to be included in the study. The remaining two documents that were not selected were also included in Appendix A.

Figure 7. Document Selection Protocol

Coding

To Code or Not to Code

Yin (2016) stated that there is "no fixed routine" for the data disassembling process. It is really up to the researcher whether or not to code, or to code some data not others (pp. 195-196). What is the rationale for doing this? "Coding leads to an indexed text, i.e. both the original text and the index … are subject to further analysis. Qualitative content analysis extracts the relevant information … and processes only this relative information" (Gläser, & Laudel, 2013, abstract). For this study, both coding, and content analysis [data extraction] were the chosen methods to construct themes from the raw data.

Manual versus Computer Assisted Coding (CAC)

After much thought and reflection, I decided to use *manual coding* instead of CAC. The proposal had supported the use of HyperRESEARCH as the preferred CAC for this project. Even though it has many advantages as a qualitative research tool, and excellent support is available on-line, it was decided not to utilize it for this study.

Yin posited that the researcher must "develop the entire underlying substantive procedure, such as sorting, coding, combining, and recombining portions of the text" (2009, p. 189). Furthermore, *"You have to do all the analytic thinking.* You will have to instruct the software every step of the way ... you cannot call upon a preset formula" (Yin, 2016, pp. 188-189; emphasis in original text).

This is a relatively small project, and while Saldaña (2013) encouraged the use of computer programs, he also suggested "that for first-time or small-scale studies, code on hard-copy printouts first…. There is something about manipulating qualitative data on paper and writing codes in pencil that give you more control over and ownership of the work" (p. 26). Basit (2003) stressed, the choice is up to the researcher, and it will depend on the size of the project and available resources (p. 152). Saldaña offered this tip: "A few of Microsoft Word's basic functions can code directly onto word-processed data" (p. 26). Several in-place, functions in PDF, and in Microsoft programs e.g., search/find, table, merge, and compare functions, etc., can be applied to various aspects of qualitative research.

Provisional coding. The provisional coding (*prior*) began with a "start list," which in this case references back to the title of the paper, thus, it correlates to the

primary research question (Miles, Huberman, & Saldana, 2014, p. 77). Keywords from the title, plus related words, were used to create the provisional start list (Table 5).

Table 5

Provisional Coding–"Start List"

CODE	SEARCH WORDS	ALTERNATIVE/RELATED WORDS	
Dr	Drought	Water crisis	
		Water scarcity	
		Water shortage	
		Water inadequacy/deficiency	
		Water insecurity	
DrPng	Drought Planning	Drought preparations	
	Planning	Water planning	
		Disaster/emergency planning	
		Mitigation planning	
		Adaptation	
		Preparations	
		Management	
		Macroview	
PP	Public Participation	**Individual(s):**	**Process(es):**
		Citizen	Engagement
		Community	Collaboration
		Member	Input
		Populace	Involvement
		Public	Meeting
		Stakeholder	Outreach
		Tribe	Participation
		Village	Participatory process
		Actor	Partnership
RePng	Reactive Planning	Crisis Management	
		Crisis-driven	
		Top-down decision-making	
		Emergency planning	
		Short–term planning	
ProPng	Proactive Planning	Contingency planning	Risk management
		Preparedness planning	Strategic planning
		Comprehensive planning	Long-term planning
		Climate adaptation	Adaptive management/planning

Sequence coding. Once relevant documents were selected via the provisional coding, additional coding was generated. This coding was based on the conceptual framework discussed in Chapter 2; a similar process of identifying key and related words was used (Table 6). A search-and-find feature was used to locate germane words; highlighting and comments were used to annotate the text.

Table 6

Sequential Coding

Code	Search words	Alternative/related words	
Inst	Institution Framework Concept	<u>Institutions</u> Norms Laws Rules/practices Established procedures Traditions	<u>Characteristics</u> Formal/informal Collective Collaborative Common goals Interactive
FJ	Fair Just	Rights Non-discriminatory Unbiased Impartial Equitable Equal	Equality Inclusion Empowerment Meaningful Opportunity Transparency
UfUj	Unfair Unjust	*Antonyms of above* Excluded Limited Marginalized Disenfranchised	Not genuine/ingenuine Tokenism Impoverished Disadvantaged

Content Analysis

Downe-Wambolt (1992) stated: "Content analysis is a research method that provides a systematic and objective means to make valid inferences from … written data in order to describe and quantify specific phenomena" (p. 314). This method requires the researcher to separate the relevant information from the text and incorporate it into themes. By removing the data from the original text, it is then possible to analyze the extracted relevant information. The "noise remains with the text that is not analyzed anymore" (Gläser & Laudel, 2013, section 3.1).

At this juncture of my research analysis, the intent has been to identify relative data using coding, thus leaving only "un-coded" text; all pertinent data recovered through coding was identified and removed from further consideration. The remaining un-coded text was read in-depth and reviewed for subtleties and emerging themes/concepts. Ryan and Bernard (2003) referred to this as *scrutiny-based* technique, that is "more time-intensive and requires a lot of attention to details and nuances" (section 3). Once all the relevant data are removed, only "noise" remains; the text is now but an empty shell.

When the un-coded data was identified as being relevant, it too was sorted into categories. Either new themes were assigned or it was integrated into existing themes. Because of the possibility that the original coding could miss subtleties and nuances, I conducted a hands-on/eye-ball approach. This facilitated the re-grouping of the relevant data. At this point, all the extracted data shared similar reconstructed characteristics.

Themes

A theme embodies the "story" of the data, perhaps it might be a surprise to some, a researcher does not really code for themes or categories. While there are research manuals that maintain researchers should code for themes, as noted by Saldaña (2013), "a theme is an *outcome* of coding, categorization, and analytic reflection" (p. 175, emphasis in original; also see Miles, Huberman & Saldaña, 2014). Creswell (2013) remarked that themes are "several codes aggregated to form a common idea" (p. 186), in other words, codes break apart the data, themes "re-construct" the data.

Themes are artefacts of realities gleaned from the raw data. By using the provisional and sequential codes it was possible to "deconstruct" the documents into manageable, "analyticable fragments" of information. According to Gläser and Laudel (2013), "Qualitative content analysis … does not contain any techniques for pattern recognitions or pattern integration. Both coding and qualitative content analysis produce an information base, which must be further analyzed in order to answer the research question" (section 5.5). Once the results of the content analysis were merged with the analyticable fragments, stories of public participation vis-à-vis both proactive and reactive drought planning began to emerge. I used this data to construct the "cases" for the cross-case/comparative analysis.

Data Analysis: Multi-Case, Within-Case Study–Proactive and Reactive Processes

Introduction

The within-case analysis was based on documentation vis-à-vis five geographical locations: South Australia, Brazil, Cape Town, Iran, Spain, plus one which analyses

through a "global" lens (developed and developing countries in general). I choose these documents specifically because they offered a world view of drought planning: location, socio-economics, drought characteristics, "maturity" of planning strategies, institutional capacity, governance, et al. While six cases are a relatively small selection, they reflect a spectrum of drought events.

While focusing on the secondary research questions and the conceptual framework delineated in Chapter 2, I identified emerging themes, I used this data to conduct a multi-case, within-case study. The analysis was performed using proactive and reactive planning as foci. Themes were used to categorize elements of the two planning strategies. Table 7 describes the process used for the within-case analysis.

Table 7

Proactive vs. Reactive, Within-Case Studies Process

Step	Purpose	Task
1	Data collection	Data consistency: • Write document selection guidelines • Assure data converges with the research question
2	Provisional data coding	Provisional coding: • Develop "starter list" using research paper title words.
3	Sequential data coding	Sequential coding: • Keywords in research questions • Keywords in framework • Relevant words found in literature review
4	Comprehensive familiarization with data	Re-read texts for in-depth comprehension: • Is the document congruent with the literature review? • Identify elements of meaning; look for relevant nuances
5	Identify and detail themes/patterns	Identify themes and answer the following: • Have additional, relevant premises emerged • Are the themes codable–new codes/existing codes • As aggregates, do the themes address the primary research question and secondary questions
6	Write analysis vis-à-vis within-case conclusions	Interpret the data: • Include data excerpts as evidence of merits of the analysis • Include relevant graphics

Within-Case Analysis Matrices

Table 8

Enumerating Emerging Themes from the Data

Focus	*Climate Data Information*	*Political Issues*	Leadership Organizational Capacity (Institution)	Media Role (Public Participation)	*Resources Funding*	Coordination/ Cooperation (Institution)
South Australia	YES	YES		YES	YES	YES
Brazil	YES	YES	YES		YES	YES
Cape Town, Africa	YES	YES	YES		YES	YES
Iran	YES	YES	YES	YES	YES	YES
Spain	YES			YES		
National Drought Policies	YES			YES		YES

Note: Italicized themes denote stand-alone emerging themes. Non-italicized themes denote themes that are integrated into existing categories. (See Appendix B for details).

Table 9

Proactive Planning Approach, Associated Themes and Conceptional Framework Elements

Focus	Proactive Planning	Public Participation	Institutions	Fair/Just	Unfair/Unjust
South Australia	Identify priorities before next drought Long term vison and plan for future drought Planning needs to be continuous	Appreciate what creates successful collaboration Communications and engagement with a diversity of individuals Open dialogue with staff Respond to local issues Tailored engagement approach.	Invest in the community, create leaders	Supply quality potable water to all living in Zone, all times Mediation between government official and banks saved farms Programs and actions serve rural communities	
Brazil	Drought policies can increase	Coordinate emergency response activities	Institutionalized risk management can improve	Water is considered to be an "inalienable	

Focus	Proactive Planning	Public Participation	Institutions	Fair/Just	Unfair/Unjust
	adaptive capacity and resilience Proactive management can reduce cost and losses Proactive approaches develop over time	with stakeholders Reduce conflicts and vulnerability before crisis	disaster response and recovery	public good" Create appropriate solutions for each community and municipality	
Cape Town, Africa	Progressive policies exist but lack capacity to implement	Diverse groups help develop planning process and identify vulnerable sectors	Identify nexus between formal and informal institutions	Constitutional right to water recognized Redress past inequitable access to water	
Iran	Preparedness strategy should be comprehensive, continuous, and at all scales Integrate water resources into preparedness and management strategies	Sustainable practice should include use of indigenous knowledge Public information, awareness, and education should be included in strategies Include experts to promote insights and approaches to participatory methodologies	Institutional process for drought management required Nationalize Institutional coordination and communication		
Spain	Implementation and planning being resisted and inertia exits Key drought management elements are "poorly implemented"	Preventative approach facilitates active participation Mitigation requires real and active participation by stakeholders and public Resolve potential sources of conflict early on, during non-drought	Institutional analysis facilitates structures and processes that affect decision-making		"Forced and urgent expropriation of private property and water rights" (Water Law, Article 58, 1985) Fear of *de facto* use of private water rights
National Drought Policies	Mitigation planning consists of actions taken before a	Improve public participation–build consensus and resolve conflicts Partnering with	Planning process can be adapted to the current institutional capacity of most	To make fair and equitable decisions, the right people have to be brought	

Focus	Proactive Planning	Public Participation	Institutions	Fair/Just	Unfair/Unjust
	drought to reduce or mitigate impacts and conflicts The process is ongoing and plans must be modified to keep current	and involving local communities all levels is vital and **also** resource-intensive	nations Institutional capacity focuses on coordination and collaboration between and amongst scales and stakeholders	together	

Note. See Appendix C for quotations and restatements that support trustworthiness.

Table 10

Reactive Planning Approach, Associated Themes and Conceptional Framework Elements

Focus	Reactive Planning	Public Participation	Institutions	Fair/Just	Unfair/Unjust
South Australia	Crisis approach prior to worsening drought			None specified	Slow response cost communities "dearly"
Brazil	Water crisis has been managed with emergency response and infrastructure Proactive approaches have been elusive	Disconnection with population has made many regions vulnerable Community members not included in vulnerability assessment	Institutional weaknesses evident in personnel and capabilities to implement No clear drought institutional framework	None specified	Impoverished people living outside cities are vulnerable to droughts No reliable water for some farmers and people in Ceará–mostly managed by reactive means
Cape Town, Africa		Government acts on behalf of the collective in anticipatory adaption State and society do not always agree	Sound leadership, and strong institutions are needed to implement strategies capably	None specified	"Informal dwellers" have inadequate access to water vs. cheap and reliable water for wealthy areas Tariffs on water benefited wealthy suburbs Poor and marginalized are affected the most State can use water security as weapon of

Focus	Reactive Planning	Public Participation	Institutions	Fair/Just	Unfair/Unjust
					coercion
Iran	Performance less that expect in response to drought Forecasting and damage assessment not included	Participation must consider climatic variations and cultural diversities across the country	Weakness in current management include reflects lack of institutional actions Incomplete institutional tasks No nationalized institutional coordination and communication	None specified	Farmers and herdsmen most vulnerable and nomadic; many are heavily in debt Economic impacts are widespread; official statistics do not reflect "real picture"
Spain	Traditional paradigm approach has been reactive Reactive approach boosted by government drought decrees	Little time left for stakeholder participation "New values" in public participation mechanisms needed	Civil organizations do not have social or media support to influence policies	None specified	Provisions for forced and seizure of property and water right for "general interest" There is a fear that water resources will be privatized and used *de facto*
National Drought Policies	Ineffectiveness of current practices are largely based on reactive crisis management Reactive practices treat the symptoms not the underlying causes for the vulnerabilities			None specified	Relief payments increase vulnerability by reducing self-reliant and increasing dependency Assistance programs do not require change in behavior Conflict may exist over access to safe and dependable water supply Vulnerability is apt to change in response to social factors

Note. See Appendix C for quotations and restatements that support trustworthiness.

Findings: Research Questions 1 and 2

The within-case analysis was perceptive and insightful. I discovered that matters related to fairness and justice were essentially prejudicial within the reactive planning mode. Practices were extremely political and unfair, markedly in regard to the disparity of benefits to the wealthy residents contrasted to those shared by the poor and marginalized, most noticeably in Brazil and Cape Town. Except for singular, water legislative in Spain, fairness and justice, including key aspects of public engagement, is matter-of-fact within the proactive planning paradigm. There appears to be a signification difference between the role public participation plays in proactive drought planning and reactive drought planning as shown in Tables 9-10.

Cross-Case/Comparative Analysis

Introduction

To answer the Research Question 3, a *comparative study* was conducted using elements from the analyses of the within-cases studies. The purpose of using the comparative case study method was to compare [replicate] the events in a systematic way, to explore different dimensions of the foci issues or to examine levels of the structural variables (Yin, 1994) (Table 11).

This study began with using the within-case analysis to produce two "single-cases"–proactive and reactive drought planning processes; for this purpose, the cases formed their own individual focus of study. Each focus-case encompassed multiply, *descriptive cases* to develop defined entities. These single-cases offered "contrasting

situations." These contrasting, descriptive cases "become a single-case study in which all … become part of some larger, main unit of analysis" (Yin, 2009, p. 60).

Table 11

Cross-Case/Comparative Case Study Process

Steps	Purpose	Task
1	Conduct cross-case analysis	Use data from within-case analysis to conduct cross-case, comparison analysis.
2	Identify similarities and differences	Compare and contrast: • Identify similarities and differences; • Seek out structural variables.
3	Write findings	Tell a compelling "story": • Develop straightforward and comprehensive interpretations of the themes; • Include relevant graphics.

Findings: Research Question 3

It became clear that there were definitive and significant differences in the public participation process between the planning approaches that seemed to contribute to less than fair and just outcomes (Table 12). This information aided in identifying possible answers to participation challenges present as the result of reactive planning; this is further discussed in Chapter 5.

Table 12

Compare and Contrast Proactive Planning and Reactive Matrix

Key-words	Proactive Themes	Reactive Themes
Planning Process	Identify priorities before drought Risk-based approaches take time to develop Requires long term resolutions Comprehensive and continuous at all levels Develop in advance Preventative measures in place Reduce cost of recovery and economic losses Facilitates active participation Regional considerations	Droughts handled reactively, after crisis identified No time for public inputs No prioritization strategy Fails to consider damage assessment Does not integrate climate/drought data Costlier than risk management Longer recovery time Treats only symptoms, not causes of vulnerabilities
Public Participation	Engagement Diverse groups give inputs Active participation Involvement at all levels Conflict resolution Build consensus Dissemination of information Include stakeholders in emergency response	Disconnection with population Community not included in vulnerability/damage assessment Acts on behalf of collective* **Note: Anticipatory adaption is seen as government responsibility*
Institution	Create leaders Recognize formal and informal institutions Institutionalized drought management process Institutions facilitate decision-making Civil organizations at disadvantage in regard to social or media support	Institutional framework unclear Strong government leadership needed Lack of organizational capacity to administer risk-base management Limited coordination and communication Institutions do not complete assigned task Absence of commitment
Political Issues	Science can benefit political decision-making	Water "currency" used for political interest and gain Politics dictates when a disaster is declaration State can use water security as means of coercion in environmental matters Institutional incoherence makes climate change inherently political Climate change can be politically inherent
Resources Funding	Invest in community, allow time for community leadership development Train agency personnel	Government does not provide funding/enough funding No "dedicated" funding mechanisms

Key-words	Proactive Themes	Reactive Themes
	New equipment acquired	Shortage of suitable agency personnel; need more trained community leaders Other priorities
Climate Data/ Information	Takes politics out of decisions *[disagreement about timing and extent of drought]* Judicious implementation of plans Advance warning of pending crisis affords for better decision-making Provides more time to initiate public participation strategies	Dearth of climate data; inaccurate data No priorities set for scientific research Climate data not integrated into policy or legislation Little or no dissemination of climate data among stakeholders; lack of scientific understanding among agencies Lack of quality scientific equipment for predicting and monitoring

Thematic Stories of Public Participation and Drought Planning

This research was designed to provide three discrete "stories" through themes: Proactive planning approach and the role of public participation, reactive planning approach and the role of public participation, and, finally, the relational story of proactive and reactive planning correlated to categories. Their stories are related in Tables 13-15.

Table 13

Droughts and Drought Planning Generalized

Prologue of the Story	
Droughts [DR]	Drought planning [DrPng]
No universal definition for drought, no two are alike Natural: temporary: • *water deficit*: temporary and anthropic • *scarcity*: permanent and anthropic • *human induced:* demands exceed availability in non-drought period Contextually–*spatially and intensity*–dependent Impacts are widespread and extend across boundaries Repercussions are accumulative and extreme in character Episodic events whose occurrence are challenging to predict. Onset and conclusion difficult to determine making effective planning and management problematic A "creeping phenomenon" that exacerbates many social problems	There is no single "blueprint" solution Potential impacts for *specific* regions and vulnerable communities should to be evaluated The populace needs to provide the current and historic information Must be continuous, even during non-drought periods; plans must be up-dated continually Crisis management shifting away from ad hoc drought relief and response to proactive, risk management Preventive and proactive approaches need to be adopted globally Institutionalization of drought planning into a coherent policy can be adapted to the institutional capacity of developed and developing nation

Note. Codes delineated in Table 5 and Table 6.

Table 14

Proactive Drought Planning Approach and the Role of Public Participation

	Proactive drought planning [ProPng]	Public participation [PP]
Themes	Long term commitment does not develop overnight; it is continuous and ongoing; a long term vision is maintained Priorities are identified and assessed before the next event Resources are available to staff and community members Tools are provided to guide decision-making and participation in a meaningful way Communications are actively exchanged between all scales of government and shared with stakeholders Evidence and non-bias based policy-making is supported by integrated climatological science and monitoring functions. Subject experts provide timely and actuate information.	Community members identify priorities Diverse groups advance the planning process by identifying vulnerable communities and advocating adaptive initiatives through the exchange of information Stakeholders identify and resolved potential sources of conflict and build consensus which creates trust Public consensus in turn strengthens implementation of policy Engagement of the collective supports emergency and response activities through communications and coordination with government agencies Real and active participation fosters risk-based management and mitigation of socio-economic impacts through collective action Institutions, informal and formal, have the capability to support and facilitate public engagement. Informed farmers minimize impacts to agricultural sectors through indigenous knowledge sharing, and willingness to undertake *new*, sustainable practices.

N*ote:* Codes are delineated in Table 5 and Table 6.

Table 15

Reactive Drought Planning Approach and the Role of Public Participation

	Reactive drought planning [RePng]	Public participation [PP]
Themes	Analysis of strategies shows weakness in drought management largely caused by lack of coordination and communication	Agencies are disconnected from the populace; "new values" in public participation mechanisms are required
	Institutional incoherence is symptomatic of complex problems making decisions inherently political	Lack of communication between the public and agencies, and convoluted changes in priorities make many regions more vulnerable
	No clear drought institutional framework; responses are reactive and short-term in nature	There is little or no time for the development of participatory strategies, and for agencies to respond to or act on community comments
	Institutions do not have the capabilities to operationalize proactive approaches	"Informal" dwellers living outside cities are disconnected from the process and
	Adaptative actions are impeded by weak cooperation between water controlling institutions	are extremely vulnerable to adverse conditions
	Only the symptoms (impacts) of drought are treated, rather than the underlying causes	Residents of "wealthy suburbs" who have a "voice" benefit most from water policies They have access to cheap reliable water supplies while poor communities "living alongside" them do
	Widespread economic impacts are often ignored unless severe. Official statistics do not reflect the real effects	not
		Civil organizations are at a disadvantage with regards to social and media support; this impacts their ability to influence policies
		Disassociated nomadic farmers and herdsmen are the most vulnerable and

	Reactive drought planning [RePng]	Public participation [PP]
		suffer serious economic and social burdens Many farmers and ranchers are heavily in debt

Note: Codes are delineated in Table 5 and Table 6.

Table 16

The Relational Story of Proactive vs. Reactive Planning Approach Related to Variables

Categories	Proactive Themes	Reactive Themes
Planning Process	Identify priorities and strategies prior to drought events Risk-based approaches take time to develop and requires long term resolutions. Comprehensive and continuous at all levels Preventative action reduces time and cost of recovery, and economic losses	Droughts handled reactively after a crisis is identified allows little or no time for participatory process No prioritized strategies Fails to consider (potential) damage assessments Much of the *strategy* consists of constructing large, public works projects Governmental agencies are in disarray, and lack commitment, expertise, and communication skills Climate/drought data not integrate into planning and policy-making; recovery costly with longer lag times Actions only treat symptoms, not causes of vulnerabilities
Public Participation	Active and meaningful participation is supported at all levels of government which creates greater trust Regional differences are respected; engagement method is tailored accordingly Stakeholders engage in conflict resolution and help build consensus; consensus facilitates implementation of policies and develops trust Active engagement of diverse groups provides relevant information about potential impacts and vulnerabilities	There is a disconnection between the populace, and government agencies and associated NGOs Community members are not included in vulnerability/damage assessments The government *acts on behalf* of collective* **Note:* Anticipatory adaption viewed as government responsibility Under-representation of marginalized people results in inequities in engagement opportunities

Categories	Proactive Themes	Reactive Themes
	The dissemination of information supports emergency response actions	
Institutions	Investment in the growth of community leaders	Institutional framework unclear
	Recognized value of formal and informal institutions to effectiveness of public participation	Institutions lack organizational capacity support and to implement policies
	Institutionalized drought management process	Limited coordination and communication
	Institutions facilitate decision-making	Institutions do not complete assigned tasks
		Institutional incoherence makes climate change inherently political
		Civil organizations (formal/informal) not supported by social or media support; at a disadvantage to influence policy-making
Emerging Categories		
Political Issues	Climate interpretation is critical to political decision-making and has a positive influence on policy implementation	Water "currency" is used for political interest and gain
		Politics dictates when a disaster is declared
		State can use water security as means of coercion environmental decisions
		Climate change can be politically inherent
Resources Funding	Investment in community allows time for leadership development, provides tools for successful and meaningful engagement	No dedicated funding mechanisms
		Government does not provide enough funding to support crisis-based activities.
	Agency personnel are trained in the risk-based process and are climate change knowledgeable	Inadequate equipment used for predictions and monitoring
	New equipment purchased for climate prediction and monitoring functions.	Shortage of trained agency personnel
	Subject matter experts are hired	More community leaders needed
		Other priorities

Categories	Proactive Themes	Reactive Themes
Climate Data/ Information	Politics taken out of the process	Dearth of climate data or inaccurate data with no priorities set for scientific research
	Advance warning of pending crisis for better decision-making and judicious implementation of plans	Data not integrated into policy and legislation
	Affords more time for establishing public engagement conventions	Little or no dissemination of climate data across various agencies and public Lack of scientific understanding
		Lack of drought and climate monitoring functions

Note: Emerging themes are detailed in Table 8 and Appendix B.

Evidence of Trustworthiness

Trustworthiness is a paradigm in and of itself; it is a conglomerate of strategies, tests, and criteria. If one of these elements falls short or is missing, without supporting evidence to the contrary, the trustworthiness of the research is at risk (Denzin and Lincoln, 2005). Yin (2016) reflected that a credible study validates the data which has been collected and interpreted aptly, and that the conclusions reflect the subject matter and existing body of knowledge. Appendices B, and C1 and C2 provide supportive data for each case through the use of quotations, excerpts and restatements.

As a researcher, the most important factor is transparency. According to Yin (2016), "The first objective is to do qualitative research with **transparency**" so that others are able to review and understand the procedure the researchers uses (p. 13, emphasis in text). Padgett (1998) recommended four elements be considered in response to post-positivism:

- *Credibility* is the degree of fit between the data's validity and its interpretation. Credibility rests on the shoulders of the researcher; the ability and steadfastness to foster trustworthiness of the research required.
- *Transferability* refers to generalizability of the study's findings.
- *Auditability* [dependability] signifies that the study's process is documented and traceable [should] have a logic that makes sense to others. The pedigree of the data was assessed to further logic and validity. (see Appendix - A).
- *Confirmability* is achieved by demonstrating the study's findings were not imagined or concocted but, rather, firmly linked to the data (pp. 180-181).

Ethical Procedures

Ethics is a fundamental factor in determining the validation of research. Creswell (2009) stated that ethical issues in qualitative research can occur during all phases of the research process. A researcher must remain circumspect.

A QDA researcher often makes subjective interpretations vis-à-vis what the data is "telling" them: What are the themes and patterns; how does the data relate to similar data; in totality, what does the data indicate. Woe be the analyst who is unduly influenced by personal bias. As a researcher, I was of the opinion that, in general, public participation was dependent on the associated agencies, not whether a drought was extant or foreseen. Additionally, it was my belief that public participation was more likely to be "fair and just" when there was adequate time and resources available during proactive planning.

Summary

Chapter 4 provided a summary of the purpose for this research, and the methodology used to advance the study was explained. This Chapter restated both the primary and secondary research questions that the analysis sought to answer. Documents were collected and analyzed as sources of data, sorted and correlated according to categories. Documents were re-reviewed for emerging themes.

The analysis consisted of two procedures: within-case and cross-case/comparative case studies. I developed three decision-supporting matrices for the within-case, one for each planning approach, proactive and reactive, and a third which enumerated emerging themes. Data associated with each planning approach was introduced according to theme; themes identified as "emerging" were sorted and incorporated in existing themes or assigned to new categories.

I found the results from the within-case analysis insightful. Situations associated with fairness and justice were handled prejudicially within the reactive planning process. Except for a seemingly legislative incongruity in Spain, fairness and justness, including public participation, was matter-of-fact within the proactive planning process. It became apparent that there were definitive and significant differences in the public participation process between the planning approaches that contributed to less than fair and just outcomes in the reactive approach This awareness provided the acuity in identifying possible answers to participation challenges present as the result of reactive planning, which is further discussed in Chapter 5.

Chapter 4 built a framework for the structure of Chapter 5. Chapter 5 includes a discussion of the interpretation, significance and implications of the findings. It provides an assessment of potential modifications in practice that could make public participation more empowering and meaningful under extant crisis, drought circumstances. In view of any limitations, delimitations or gaps identified during the analysis process, recommendations for further enquiry and research are proposed in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Purpose for Study

I conducted this study to assess proactive and reactive drought planning processes and their connection to public participation. I also worked to identify structural variables that influence empowerment, especially of disenfranchised and marginalized segments of society. Until there is a better understanding of the impediments to meaningful public participation inherent in reactive planning, the populace at greatest risk will remain at risk. I used the findings from this study to formulate recommendation that could be applied to reactive planning to facilitate meaningful participation and empowerment of all stakeholders. It is my goal to bridge the gap between what is practiced during reactive drought planning and proactive planning.

Nature of Study

In this study, I evaluated the public participation process during both reactive, crisis-driven drought planning and proactive, drought-preparedness planning to determine the impact of structural variables on the participatory procedure. In this multiple case study, I conducted both within-case and cross-case analysis of documentation.

Provisional coding of data from the documents consisted of keywords derived from the title of this dissertation, plus related words (Table 5). Sequence coding (Table 6) was based on wording in the conceptual framework discussed in Chapter 2. Other relevant terms were identified during the document analysis; I marked these as emerging and organized and incorporated them into existing themes or assigned them to new categories: leadership/organizational capacity (institution), media role (public

participation), coordination/cooperation (institution), climate data information, political issues, resources/funding (see Tables 8 and 16, and Appendix B).

I used the findings from the within-case study to conduct a cross-case analysis with the intent of identifying differences and similarities, and delineated structural variables as they apply to public participation. After identifying differences and similarities during the cross-case analysis, I was surprised by how well clustered the data were vis-à-vis the relevant proactive and reactive themes. Table 12 includes the keywords that were used to organize the data for the cross-case analysis: planning process, public participation, institution/governance, political issues, resources/funding, and climate data/information.

Why the Study Was Conducted

There is neither a shortage of public participation modeling for water resource planning and management, nor a lack of informational material on contingency planning for droughts; however, there are few studies that address the issue of what to do when a drought is extant and actions are crisis-drive and reactive. This represents is a crucial gap in the research literature. Since droughts are occurring globally and the people who are at the greatest risk are generally excluded from the planning process, it is important to understand how this situation might be resolved.

Conceptual Framework

Institutions

I conducted the analysis using the conceptual lens of IAD, which examines how institutions give rise to systematic changes in government. Institutions are composites of

norms, laws, policies, traditions, cultures, and values—in short, anything that sets people apart, yet has the power to bring them together for collaborative action. The goal is to empower all, thereby, creating a new form of government that gives individuals the opportunity to be "collaborators" during institutional decision-making and the ability to suppress rigid bureaucratic hierarchies and embedded inequities (Ostrom, 1990, as cited in Walker et al, 2015).

Institutions are the singularities that dictate traditions, values, and norms in a collective, including how it responses to a common crisis. In the past, institutions have, for the most part, been dominated by government bureaucracy; however, in many parts of the world this mindset is changing. Now, institutions are no longer just a device of governance. Given the opportunities and over time, the populace is bringing about change by establishing institutions which facilitate resolving mutual dilemmas.

Institutions, whether they are governmental or NGOs, formal or informal, appear to be impeded by two major issues: the absence of commitment to the process, and lack of organizational capacity and adaptability. Rising from this muddle emerges (a) little or no coordination and communication within and between agencies and with the public, (b) resistance to change, and (c) decision-making conducted exclusively in the political arena.

Government entities must be willing to face realities of drought planning. The impacts of drought accumulate over time and can exacerbate many existing problems. These impacts are non-structural and extend over large areas, and they are difficult to manage because of timing ambiguities. Unfortunately, many of the resulting problems

affect the poor and marginalized populations who are considered "informal" urban residents, and those living on farms and outside of urban areas more acutely. The wealthy and voiced, "in-towners," are usually the beneficiaries of operational and economic considerations during droughts.

It appears that institutions may actually play a role in exacerbating problems and, in some ways, serve as their own worst enemies. There is frequently no systematized structure, public engagement is not supported or even encouraged, tasking priorities are sometimes unrealized, and resources are not judiciously utilized or are squander away in the name of intransigency with the understanding that if enough money is thrown at a problem, then it will go away. In areas were unfairness and injustice prevail, institutions seem to be unhurried to meet the challenges of shifting to proactive risk management, which seems to be more conducive to justice and fairness.

Procedural Justice–Just and Fair

Procedural justice and fairness speaks to the principles and norms of collective action in solving public dilemmas. Fairness is often just a matter of perception; even if people do not agree with the outcome, if they perceive the procedure was just and fair, they will accept and support the decisions (Webler & Tuler, 2002). Public participation plays a key role in forming perceptions. Public participation builds trust in the process, trust in each other, and trust in government. People are given the opportunity to make their case and to be heard. Information is mutually exchanged and each entity provided support for the other. As a result, they can bring about organized transformation out of

chaos. Ostrom (1998) argued that it was the common citizen who established and maintained the institutes which channeled fairness and justice.

I have highlighted each of the variables enumerated in Figure 8 that, in my judgement, showed evidence of influencing fairness and participation. Some of the variables I judged to be the direct results of reactive, crisis planning and management, and others were deemed shortcomings in the basic process. When reviewing the highlighted limitations, it was possible to identify common elements of the participatory procedure. These factors could then be applied during reactive drought planning with structural variables developed that would better align the process with proactive planning and, in turn, promote procedural justice.

Gaps in Literature

During the literature review, I identified specific research gaps associated with the difference between proactive planning and reactive planning and the role of the public participation:

- Gross (2008) contended that research concerning issues of equity and fairness has mostly been "abstract" or "external to social context," and has been identified as a gap in allocation research (p. 130).
- Rowe and Frewer (2004) stated that, to date, few cases have addressed the effectiveness of the participatory process in a structured manner. The authors also acknowledged that an important step in the development of a theory required understanding individuals' normative beliefs about the process in diverse scenarios.

Interpretation of the Findings

Primary Research Question

The findings provided the evidence to arrive at a response to the principal research question: How does procedural justice and fairness and the institutional analysis and development framework relate to participation during reactive, crisis-driven planning versus proactive, preparedness planning?

When I attempted to explore the comparable differences between the proactive and reactive planning processes, I found it difficult to determine cause and effect. Thus, it was initially challenging to identify the structural variables that influenced the nature of reactive planning so that less than justice and fairness and lack of meaningful engagement ensued. Ostrom (2007) stated that "instead of looking at all of the potential variables, one needs to focus in on well-defined but narrow chain of relations" (p. 203) because a large number of interacting variables would influence a given collective action (Poteete & Ostrom, 2004). I turned to the conceptual framework that was developed for this study for guidance.

Secondary Research Questions (RQs)

Within-case analysis: RQs 1 and 2. In the first secondary research question, I asked: What is the role of public participation in drought preparedness planning when actions are proactive? I found the following:

- Diverse groups advance the planning process by identifying priorities, vulnerable communities and advocating adaptive initiatives through the exchange of information.

- Stakeholders identify and resolved potential sources of conflict and build consensus which creates trust, and, in turn, supports implementation of policy.
- Engagement of the collective supports emergency and response activities through communications and coordination with government agencies.
- Real and active participation fosters risk-based management and mitigation of socio-economic impacts through collective action.
- Institutions, informal and formal, support and facilitate public engagement.
- Informed farmers minimize impacts to agricultural sectors through indigenous knowledge sharing.

For the second secondary research question I asked: What is the role of public participation when actions are taken during an extant drought in reactive, crisis mode? I found that:

- The public and agencies do not interact or communicate; agencies are disconnected from the populace.
- Communities are left out of participatory process because there is little or no time for the development of engagement strategies.
- The public is disregarded; agencies do not take time to respond or act on community comments.
- "Informal" dwellers living outside cities are disconnected from the process and don't have the opportunities to express concerns making them extremely vulnerable to adverse conditions.

- Residents of "wealthy suburbs" have a "voice" and benefit most, while poor communities are excluded from the participatory process and often endure inequities in water supplies.
- Under-represented marginalized people have disproportional engagement opportunities.
- Civil organizations (institutions) are at a disadvantage with regards to social and media support, which impacts their ability to influence policies.
- Disassociated nomadic farmers, herdsmen and ranchers have no influence and are the most vulnerable, and experience disparate serious economic and social burdens.

General Findings for RQs 1 and 2. The within-case analysis was both disconcerting and insightful. Matters related to fairness and justice were essentially prejudicial within the reactive, crisis planning process. Most noticeably in Brazil and Cape Town, instances were political and inequitable, especially when considering the disparity of water allocations and costs in the wealthy areas contrasted with districts of the poor and marginalized residents. Notably, key aspects of public engagement involving fairness and justice was matter-of-fact in the proactive planning paradigm, but not so in the reactive planning process. There were discernable differences (see Tables 9 and 10).

Secondary Research Question 3: Cross-Case/Comparative Analysis. In the third secondary research question, I asked: What are the dissimilarities in structural variables when actions taken are in a reactive, crisis mode versus. a proactive mode?

proactive? I found the following:

- Government disconnected from the population; no active participation and no engagement strategies in place; missed opportunities for building trust.
- Minimal or no time for public member inputs or for responses from agencies; the public as a whole is given little consideration.
- Stakeholders not included in setting priorities, decision-making, or implementation.
- No free exchange of essential information between the community and government staff.
- Absence of commitment; limited coordination and communication amongst agencies and between the public.
- Government does not provide adequate funding and often no "dedicated" funding mechanisms exist to promote and support fair and just processes; other priorities.
- No investments made on the behalf of community groups: no training, no time allowed for leadership development and no tools that facilitate meaningful participation.
- Climate change can become inherently political because of the dearth of accurate and timely climate data; institutional incoherence can further this.
- Little or no dissemination of climate data amongst stakeholders; lack of climate change understanding has a negative effect on decision-making and implementation.

I conducted a cross-case/comparative study using the results of the within-cases study to develop contrasting themes of the analysis (Table 11). Yin (1994) explained that the purpose of using the comparative case study method was to compare events in a systematic way, to explore different dimensions of the foci issues. or to examine levels of the structural variables.

The concept of variables depends on the institutions, circumstances, and complexity of the decision-making process. Hassenforder, Smajgl, and Ward (2015) offered this perspective: "Variables [are] elements or criteria used to describe participatory processes;" perhaps, one could think of them as part of the world view of participation. As mentioned previously, there are no two droughts the same and there is no one blueprint for solutions, so it is with the identifying variables. As Hassenforder et al. (2015) stated, much depends on the complexity of the process. I made an attempt to wrap these issues into one neat packaged, however, the issues were very convoluted. More information regarding variables and their influence on the participatory process can be found in Chapter 4.

Summary of Findings

I found a signification divergence between the role public participation plays in proactive drought planning and that played in reactive drought planning. Public participation had a positive influence on proactive planning and implementation; however, this was basically absent during reactive planning (Table 17). This inconsistency might explain the seemingly injustice and unfairness associated, not only

within the reactive planning public participation process, but also as part of crisis management and implementation in general.

Table 17

Limitations in the Basic, Reactive Planning Process

Category	Reactive
Public Participation	Disconnection with population Community not included in vulnerability/damage assessment No time for public inputs No prioritization strategy
Institutions/Governance	Institutional framework unclear Anticipatory adaption is seen as government responsibility Strong government leadership needs to be developed Lack of organizational capacity Limited coordination and communication Institutions do not complete assigned tasks Absence of commitment at all scales of government
Political Issues	Institutional incoherence makes climate change inherently political Water currency used for political interest and gains Politics dictates disaster declaration State can use water security as weapon of coercion Climate change politically inherent
Resources Funding	Government does not provide funding/enough funding No dedicated funding mechanisms Inadequate training for agency personnel More community leaders are needed Lack of quality scientific equipment for predicting and monitoring Other priorities
Climate Data/ Information	Dearth of climate data Inaccurate data No priorities set for scientific research Data not integrated into policy Lack of scientific understanding among agencies Little or no dissemination of climate data among agencies and public

Themes Relating to Limitations in the Basic, Reactive Planning Process

Institutions/Governance

Some governments share the belief that it is the responsible of government to act on behalf of the people, especially in times of crisis. This can result in total disassociation, both throughout the crisis, and during planning, implementation, and recovery period. Government has also pointed to other justifications for limiting participation, for example, no time, no funds, no trained personnel, not a priority. This is clearly contrary to the principles of meaningful engagement.

There may never seem to be a good time for including the public during a crisis, however, by doing so, justice and fairness, trust and confidence are introduced into the process. Indigenous knowledge is brought to the table, priorities are clarified, implementation is supported, and recovery is a compilation of community action.

Climate Data/Information

I have previously stressed that there are no two droughts alike, however, accurate and timely climate data would provide policy-makers with early warnings that would support broader, drought policy-making. I believe that it is important to recognize the face of a drought, without doing this, there is a tendency to live from drought to drought and to look at all droughts as similar, attempting the same solutions.

Lacking accurate and timely climate information can result in decisions being made based on political preferences rather than making informed choices. Data that can be readily disseminated among stakeholders and policy-makers offers assurances that

timely, knowledgeable, and just and fair decisions are made. This enhancements transparency in the decision-making process.

Recommendations for Better Alignment

If this was a perfect world, procedural justice would be an integral part of all decision-making processes. Perea (2008) related that planning and management during existing, drought conditions tends to be reactive and crisis-driven; thus, a participatory process that is not truly "genuine" (p. 151) is created. The most effective way to cope with public dilemmas, especially scare water resources, is to employ a proactive approach to public participation.

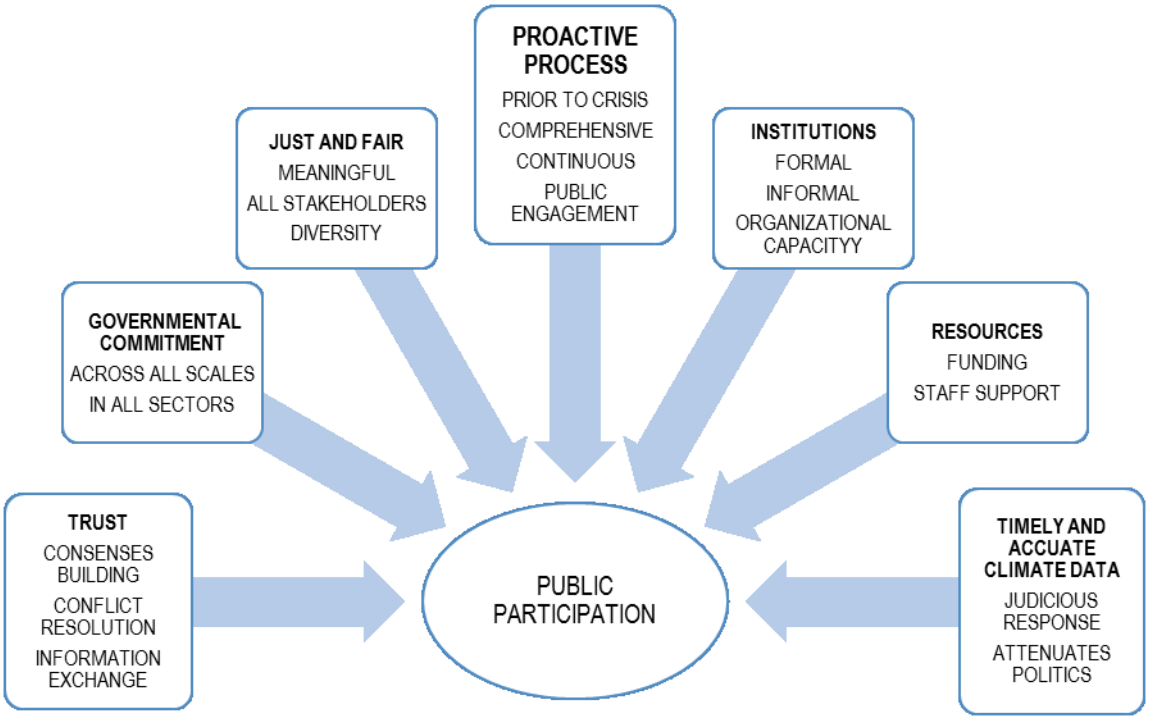

Figure 8. Basic factors that influence public participation in a positive way during proactive planning process.

Variables and interactions, these shape the portal of public participation–positively or negatively (see Figure 8). In harmony, participation can be empowering, however, if there is discord amongst these attributes the consequences could be prejudicial. In this regard, I would like to share the following thoughts:

- Agencies must understand and appreciate the value of public engagement and be committed to the process. This requires a change in how agencies conceptualize the process–they must see the public as an asset, not a hindrance.
- Institutional resources should be made available. This is not a situation during which to find justifications for restraining participation, such as, time is limited, no funding, no trained personnel, no community leaders, other priorities, etc. If there is commitment, there will be available resources even if it requires marshalling resources from other functions. It is more difficult and costlier to confront a drought alone, than to unite with the people.
- Policy-makers need to know what is occurring and what to expect. Scientific data is essential and must bet be shared. Trust is most at risk at during a crisis.
- The public is attuned to potential vulnerabilities within a given area and should be heard. Agencies must seek out and heed this counsel. This charge is essential to procedural justice.

There is little logic to not applying these concepts during crisis-driven planning and management. It may only require a change away from doing business as usual, then again, change is sometimes not easy to come by. Events may not be similar and they are

ever changing, however, to better align reactive planning with proactive planning the spirit of procedural justice and fairness must be a part of institutional governance

Significance

As part of this study, I evaluated six water resource planning and public participation scenarios in holistic and systematic terms. The goal was to bridge the chasm between procedural justice and fairness and what is actually practiced during reactive, crisis-driven drought planning. By contrasting the processes and outcomes of these public participation scenarios, I deduced that this gap could be filled with recommendations that facilitate a more meaningful and equitable engagement of the public. I found that the populace which is disenfranchised from the public participation process is affected disproportionately, especially during reactive drought planning when they have little or no voice in policy-making; this often results in less than fair action taken on their behalf.

Trustworthiness

Documentation Validation

Yin (2016) stated that credible study validates the data which has been collected and interpreted objectively, and that the conclusions reflect the subject matter and existing body of knowledge. In the furtherance of objectivity and trustworthiness, Appendix A: Précis of documentation worksheets, was written for each document used, or considered but not used, as an alternative to an annotative bibliography. Each worksheet provides the name of the author(s), association(s), type of document, whether peer reviewed, focus, funding source(s), and mode of research. Appendices B and C

provide supportive data for the six cases by means of quotations, excerpts, and restatements taken from the documents.

Delimitations

There are several delimitations I would like to reiterate:

- Originally, the scope of this study focused on regional drought planning and public participation in the United States; however, I decided to look at the issue globally, and to include both developed and developing countries. While the study incorporates specific countries and regions, this is only done to obtain a world view. It should be empathized that the focus is on public participation not locations.
- Frequently, the issue of equality and justice is a matter of perceptions. This can only be inferred prompted by an action. It is beyond the scope of this research to analyze *individual* perceptions, only actions that occur.
- Although there are crucial global implications of drought, it is not within the scope of this research to debate the issue of *climate change*.
- Several locations that were studied, notably Cape Town, South Africa, have in recent history experienced political and/or social-economic changes; it is not within the scope of this research to address these issues per se, but only as they relate the analysis.

Limitations

Here are a couple of limitations I would like to summarize here:

- At the inception of this research, an assumption was made that suitable data was available; for **both** reactive and proactive planning. However, documents are not written with a data research agenda. Thus, I opted to focus on each of the six documents from these perspectives, then evaluate the quality of the information and the ability to answer the research questions. This was a slight departure from the approach discussed in Chapter 3:
- All the selected documents were published within the last seven years. Because the existence of a drought and its impact(s) are not always realized for some years after the initial *onset* begins, the timing allows for an in-depth, retrospective view of the event. Most articles that are written at the time of an identified crisis tend to be from news sources, not scholarly sources.

Current Research Trends: Nexus with Current Research-Modeling

While it is not within the scope of this study to go into depth about water resource, decision modeling, a limited discussion was included in the literature review to offer the reader an appreciation for some of the current work being conducted. There is no lack of interest nor shortage of public participation modeling for water planning and management. As mentioned previously, what is missing are specific strategies on how to advance from a state of reactive, crisis-driven planning to one of proactive planning without interrupting the on-going process. It seems that to do so, would require an understanding of structural variables to calibrate the model.

Over the last decade these models have been reordered for water resource decision-making, or new models have been developed. Carr, Blöschl, and Loucks (2012)

conveyed that many models are “outcome” focused and do not evaluate processes. Public participation modeling is still evolving, and more study is needed that will enable administrators to bring equality and fairness into the planning process. Considering the large amount of literature and often conflicting premises, there are big challenges to face.

Basco-Carrera et al. (2017) proposed a generic framework that can be used by stakeholders, practitioners and decision-makers, one that is user friendly, to evaluate various modeling approaches. The authors believed that to demonstrate the applicability of such framework to water resources planning and management globally, further research is necessary.

Recommendations

Recommendation Based on Delimitations

In view of the global nature of drought crises, I consider this study to be very restricted in scope; however, it has sagaciously identified tendencies inferred by the data and supported by the literature. With regard to the delimitation discussed previously, I do not argue that the more that is known and understood about the circumstances in which a drought exits and "operates," the better it will be to plan and manage its effects. There are still many gaps in current literature. There needs to be holistic research germane to droughts; it needs to be spatially adapted and involved experts from diversified fields of study. There must be a synergistic approach.

Recommendation for Further Research

Research is ephemeral; it is absolute only at the moment the researcher says: "Eureka." After that single moment in time, it treks along a pathway to obsolescence,

giving rise to new questions of what, why, when, where, and how to be answered. The following is but one recommendation for further research:

Current literature is basically silent about specific strategies for advancing from the state of crisis, reactive planning to one of proactive planning without interrupting the on-going emergency management activity during the drought. An in-depth analysis of a single, drought-prone area might be telling: How does drought planning evolve or devolve? A multi-case analyses of reactive and proactive scenarios, i.e. drought characteristics, institutions and governance, demographics of the affect region, and planning horizon for a designated area would provide insightful data with which to trace the evolutionary of the in-situ, drought planning process, for better or worse, and then use this information to develop an approach for advancing a crisis-driven process towards a preparative one.

Significant information could be gleamed from this study. Questions at issue might include: How does climate change accommodation alter overtime, from the onset period to some future time? How are the associated themes of institutions, fairness and justice, and public participation imbedded in the process? The key results from this study may well evoke strategies with which to confront future global climate challengers.

Potential Impact for Positive Social Change

The prospective for social changed advanced by this study was established on a sound public participation strategy that could be applied during reactive planning, thereby, supporting empowerment which advocates equality and procedural justice in policy-making. The goal of this research was to bring reactive planning into better

alignment with proactive planning to facilitate a more meaningful and equitable engagement of the public, notably marginalized individuals, during a drought crisis.

The most effective way to cope with scarce water resources, a common good/common pool, is to employ a proactive *approach* to public participation; despite this supposition, Perea (2008) averred that when planning and management of water resources during drought conditions are reactive, public involvement in decision-making is not always truly "genuine" (p. 151). Innes and Booher (2010) argued that if public participation is conducted, it is only to seek validation of actions that have already been taken–a case of Decide, Announce, Defend. When administrative modifications are used to circumvent meaningful engagement, genuine empowerment is clothed in the guise of public participation.

Reflections

Climate data is not an issue I had considered going into this study. However, the topic of weather data prevailed throughout the discourse in the articles, whether the process was reactive or proactive. Each article stressed that the lack of data is a serious deficiency in climate accommodation planning: How can the onset of a drought be determined? What are the spatial boundaries? How extreme will it get? What part of the cycle are we in now? How much longer will the drought last? All these questions must be answered to ensure that policy-making and implementation is effective and serves the needs of the community.

Without well-founded answers to these questions, drought planning, management, and implementation have been a practice of *proceed-as-you-ponder … regardless*.

Decision-making and all it encompasses hinges on valid and timely information, and the ability of the community and agencies to assimilate the ramifications. Droughts are spatial, and, to reiterate, no two droughts are similar in contexts or circumstances, this poses a conundrum to the community, scientists, and decision-makers alike.

Conclusion

Climate challenges will always be a certainty just as they have been for ages. Because populations are greater and more dispersed the impacts are more profound, but we have the tools to manage the impacts. It is important to stress that government is not the only actor in this matter; as a global community each of us have a role to play, but we must be judicious, just and fair, and synergistic in our approach in how we counter future climate challenges.

References

Abelson, J., Forest, P. G., Eyles, J., Smith, P., Martin, E., & Gauvin, F. P. (2003) Deliberations about deliberative methods: Issues in the design and evaluation of public participation processes. *Social Science & Medicine 57*, 239-251. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/12765705

Ameziane, T., Belghiti, M., Benbeniste, S., Bergaoui, M., Bonaccorso, B., Cancelliere, A., ... Ziyad, A. (2007). Mediterranean Drought Preparedness and Mitigation Planning. Drought Management Guidelines (MEDROPLAN). In A. Iglesias, A. Cancelliere, D. Gabiña, A. López-Francos, M. Moneo, G. & Rossi (Eds.). *European Commission–Europe Aid Co-operation Office Euro-Mediterranean Regional Programme for Local Water Management (MEDA Water).* Retrieved from https://sustainabledevelopment.un.org/content/documents /3907MEDROPLAN%20guidelines_english.pdf

Andersson, L., Olsson, A., Arheimer, B., & Jonsson, A. (2008). Use of participatory scenario modelling as platforms in stakeholder dialogues. *Swedish Meteorological and `Hydrological Institute.* Retrieved from http://www.scielo.org.za/pdf/wsa/v34n4/03.pdf

Ansell, C., & Gash, A. (2007). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory 18,* 543–571. Berkeley, CA: University of California. doi:10.1093/jopart/mum032

Anyadike, O. (2017, March 17). Drought in Africa 2017: "Framers, traders and consumers across East and Southern Africa are feeling the impact of consecutive

seasons of drought that have scorched harvests and ruined livelihoods." Integrated Regional Information Networks Newsletter. Retrieved from https://www.irinnews.org/feature/2017/03/17/drought-africa-2017

Arnstein, S. (1969). A ladder of citizen participation. *Journal of American Planners 35*(4), 216-224. doi:10.1080/01944366908977225

Bandaragoda, D. J. (2000). A framework for institutional analysis for water resources management in a river basin context. Working paper 5. *International Water Management Institute.* Colombo, LK.

Basco-Carrera, L., Warren, A., van Beek, E., Jonoski, A., & Giardino, A. (2017). Collaborative modelling or participatory modelling? A framework for water resource management. *Environmental Modelling & Software 91,* 95-110. doi:10.1016/j.envsoft.2017.01.014

Basit, T. N. (2003). Manual or electronic? The role of coding in qualitative data analysis. Educational Research, 45, 143-154. doi:10.1080/0013188032000133548

Bazeley, P. (2007). *Qualitative data analysis with NVivo.* Thousand Oaks, CA: SAGE Publications Inc.

Bowen, G. (2005 June). Preparing a Qualitative Research-Based Dissertation: Lessons Learned. *Qualitative Report, 10*(2), 208-222. Retrieve from http://www.nova.edu/ssss/QR/QR10-2/bowen.pdf

Bowen, G. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal, 9*(2), 27-40. doi:10.3316/QRJ0902027

Beierle, T. C. (2002). The quality of stakeholder-based decisions. *Risk Analysis 22*(4)*,* 739-749. doi:10.1111/0272-4332.00065

Beierle, T. & Cayford, J. (2002). *Democracy in practice–Public participation in Environmental Decisions.* Washington, D.C.: Resources for the Future.

Bello, A., Kamariah, D., Yazid, M., Maidin, A., & Maulan, S. (2013). Reviewing the ambiguous: Examining the typologies of public participation towards its evaluation*. Journal of Sustainable Development 11*(6), 43-54. doi:10.5539/jsd.v6n11p43

Biermann, F. (2007). 'Earth system governance' as a crosscutting theme of global change research. *Global Environmental Change 17*(3-4), 326-337. doi:10.1016/j.gloenvcha.2006.11.010

Bonneman, T. (2010, August 6). The ethics of public participation [Blog post]. *Intellitics*. Retrieved from http://www.intellitics.com/blog/2010/08/05/the-ethics-of-public-participation/

Bowen, G. (2005 June). Preparing a Qualitative Research-Based Dissertation: Lessons Learned. *Qualitative Reporter, 10*(2), 208-222. Retrieved from http://www.nova.edu/ssss/QR/QR10-2/bowen.pdf

Bowen, G. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal, 9*(2), pp. 27-40. doi:10.3316/QRJ0902027

Caica, P., Beal, A., Maywald, K., Brown, D., Doherty, P., Lamont, H., Brookes, J. (2012). Response to drought in South Australia: A case study in adaptive management. *Proceedings of ICE WaRM workshop held on 7 December 2011,*

Australia. Retrieved from https://www.icewarm.com.au/wp-content/uploads/Drought-Workshop-Proceedings-WEB.pdf

Cairney, P. & Heikkila, T. (2004). A comparison of theories of the policy process. In P. Sabatier, & C. Weible (Eds.). *Theories of the policy process* (3rd ed.). 363-389. Boulder, CO: Westview Press.

Carr, G., Blöschl, G., & Loucks, D. (2012). Evaluating participation in water resource management: A review. *Water Resource Research, 48*(W11401). doi:10.1029/2011WR011662,2012

Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). Thousand Oaks, CA: SAGE Publications Inc.

Creswell, J. (2009). *Research design: qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, CA: SAGE Publications Inc.

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: SAGE Publications, Inc.

Day, J. & Gunton, T. (2003). The theory and practice of collaborative planning in resource and environmental management. *Environments, 31*(2), 5-19. Retrieved from https://www.thefreelibrary.com/The+theory+and+practice+of+collaborative+planning+in+resource+and...- a0111855596

Denzin, N., & Lincoln, Y. (Eds.). (2005). *The SAGE handbook of qualitative research* (3rd ed.). Thousand Oaks, CA: SAGE Publications Inc.

Downe-Wambolt, B. (1992). Content analysis: Method, applications and issues. *Health Care for Women International, 13*(3), 313–321. doi.org/10.1080/07399339209516006

Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the social sciences* (7th ed.). New York, NY: Worth Publishers.

Gläser, J., & Laudel, G. (2013). Life With and Without Coding: Two Methods for Early-Stage Data Analysis in Qualitative Research Aiming at Causal Explanations. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research, 14*(2). doi:10.17169/fqs-14.2.1886

Gutiérrez, A. P. A., Engle, N. L., De Nys, E., Molejón, C., & Martins, E. S. (2014). Drought preparedness in Brazil. *Weather and Climate Extremes*, *3*, 95-106. doi:10.1016/j.wace.2013.12.001

Directive 2000/60/EC (European Communities) of the European Parliament and the Council of the European Union. (2000, October 23). *Official Journal of the European Communities OJ L 327, 22.12.2000, p. 1.* [OJEC now recognized as OJEU]. Retrieved from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32000L0060

Downe-Wambolt, B. (1992). Content analysis: Method, applications and issues. *Health Care for Women International, 13*(3), 313-321. doi.org/10.1080/07399339209516006

Eckersley, R. (2004). *The green state: Rethinking democracy and sovereignty*. Cambridge, MA: MIT Press.

Emerson, K., Nabatchi, T., & Balogh, S. (2011, May 2). An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory Advance Access, 22,* 1-29. New York, NY: Oxford University Press. doi:10.1093/jopart/mur011

Exec. Order No. 12,898, 3 C.F.R. 859 (1995). "Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations." *reprinted as amended in* 42 U.S.C. § 4321 (1994 & Supp. VI 1998).

Fiorino, D. (1990, Spring). Citizen participation and environmental risk: A survey of institutional mechanisms. *Science, Technology, & Human Values 15*(2), 226-243. doi.org/10.1177/016224399001500204

Forest, P. G. (2013, April 30). "Citizens as Analysts" Redux: Revisiting Aaron Wildavsky on public participation. *Journal of Public Deliberation 9*(1). Retrieved from http://www.publicdeliberation.net/jpd/vol9/iss1/art7

Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the social sciences* (7th ed.). New York, NY: Worth Publishers.

Fu, X., Svoboda, M., Tang, Z., Dai, Z., & Wu, J. (2013, December). An overview of US state drought plans: Crisis or risk management? *Natural Hazards, 69*(3), 1607-1627. doi:10.1007/s11069-013-0766-z

Fu, X., Tang, Z., Wu, J., & McMillan, K. (2013). Drought planning research in the United States: An overview and outlook. *International Journal of Disaster Risk Science, 4*(2), 51-58. doi:10.1007/s13753-013-0006x

Gabiña D., Iglesias A., López-Francos A. (2007). The Medroplan project: Process and key lessons. In: A. Iglesias, M. Moneo, and A. López-Francos (Eds.). *Drought management guidelines technical annex* (pp. 9-12). Zaragoza: CIHEAM / EC MEDA Water (Options Méditerranéennes: Série B. Etudes et Recherches; n. 58). Retrieved from http://om.ciheam.org/om/pdf/b58/00800529.pdf

Gaventa. J. (2006, November). Finding the spaces for change: A power analysis. *IDS Bulletin, (37),* 23-33. doi:10.1111/j.1759-5436.2006.tb00320.x

Gläser, J., & Laudel, G. (2013). Life With and Without Coding: Two Methods for Early-Stage Data Analysis in Qualitative Research Aiming at Causal Explanations. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research, 14*(2). Retrieved from http://dx.doi.org/10.17169/fqs-14.2.1886

Grigg, N. (1985). *Water resource planning.* New York, NY: McGraw-Hill, Inc.

Gross, C. (2008). A measure of fairness: An investigative framework to explore perceptions of fairness and justice in a real-life social conflict. *Human Ecology Review, 15*(2), 130-140. Retrieved from https://press.anu.edu.au /publications/human-ecology-review

Gutiérrez, A. P. A., Engle, N. L., De Nys, E., Molejón, C., & Martins, E. S. (2014). Drought preparedness in Brazil. *Weather and Climate Extremes*, *3*, 95-106. doi:10.1016/j.wace.2013.12.001

Habermas, J. (1979). *Communication and the evolution of society* (T. McCarthy, Trans.). Boston, MA: Beacon Press (Original work published 1976)

Habermas, J. (1996). *Between facts and norms: Contributions to a discourse theory of law and democracy.* Cambridge, MA: MIT Press.

Harris, L., Rodina. L., & Morinville, C. (2015). Revisiting the human right to water from the environmental justice lens. *Politics, Groups, and Identities Journal*. doi:10.80/21565503.2015.1080619

Hart, V. (2003, July). Democratic constitution marking–special report 7. *United States Institute of Peace.* Retrieved from http://www.usip.org/sites/defauWlt/files/sr107.pdf

Hassenforder, E., Ferrand, N., Pittock, J., Daniell, K., Barreteau, O. (2015). A participatory planning process as an arena for facilitating institutional bricolage: Example from the Rwenzori region, Uganda. *Society and Natural Resources 28*(9), 995-1012. Retrieved from https://researchers.anu.edu.au/publications/116694

Hassenforder, E., Smajgl, A., & Ward, J. (2015, April 14). Towards understanding participatory processes: Framework, application, and results. *Journal of Environmental Management 157*(2015), 84-95. doi.org/10.1016/j.jenvman.2015.04.012

HyperRESEARCH. (2016). [website]. Research Ware, Inc. Retrieved from http://www.researchware.com/

Ingram, H. M., Mann, D. E., Weatherford, G. D., & Cortner, H. J. (1984, March). Guidelines for improved institutional analysis in water resources planning. *Water*

Resources Research 20(3), 323-334. Retrieved from http://escholarship.org/uc/item/7rf2b2vv

Innes, J. & Booher, D. (2004, December). Reframing public participation: strategies for the 21st Century. *Planning Theory & Practice, 5*(4), 419-436. doi:10.10.1080/1464935042000292170

Innes, J. & Booher, D. (2010). *Planning with complexity–An introduction to collaborative rationality for public policy*. New York, NY: Routledge.

Irvin, R. & Stansbury, J. (2004, January/February). Citizen participation in decision making: is it worth the effort? *Public Administration Review 64* (1), 55-65. doi:10.1111/j.1540-6210.2004.00346.x

Király G. (2012). *Másképpen dönteni: a részvétel igénye és esélyei Magyarországon. [The needs and possibilities of public participation in Hungary]* in 'Bölcs laikusok. Környezet, részvétel, demokrácia Magyarországon' [Environment, participation, democracy in Hungary], 11-34 (Eds.: Pataki, G., Fabók V., Balázs, B.) Alinea Kiadó, Védegylet, ESSRG, Budapest.

Kiss, G. (2014). Why should the public participate in environmental decision-making? Theoretical arguments for public participation. *Periodica Polytechnica Social and Management Sciences, 22*(1), 13-20. doi:10.3311/PPso.7400

Koba, M. (2014, September 5).Global drought real threat to lives and economies: Experts. [CNBC Online]. Retrieved from https://www.cnbc.com/2014/09/16/droughts-predictions-are-difficult-on-when-theyll-end.html

Kuehn, R. (2000). A Taxonomy of environmental justice. (*Environmental Law Reporter, Vol. 30*. In C. Rechtschaffen & E. Gauna (Authors). *Environmental justice–law, policy, and regulation*. (2002) (6-11). Durham, NC: Carolina Academic Press.

Kuehn, R. (2015, Fall). Bias in environmental agency decision making. *Environmental Law, 45*(957), 958-1018. Retrieved from https://law.lclark.edu/live/files/21023-45-4kuehnpdf

Larson, R. (2013, September). The new right in water. *Washington and Lee Law Review 70*(4), 2181-2267. Retrieved from http://scholarlycommons.law.wlu.edu /wlulr/vol70/iss4/10

Lawrence, A. (2006). 'No personal motive?' Volunteers, biodiversity, and the false dichotomies of participation. *Ethics, Place and Environment, 9(3),* 279-298. doi.org/10.1080/13668790600893319

Leventhal, G. S. (1980). What should be done with equity theory? New approaches to the study of fairness in social relationship. In K. Gergen, M. Greenberg, & R. Willis (Eds.). *Social exchange: Advances in theory and research,* 27-55. New York, NY: Plenum Press.

Lewins, A. & Silver, C. (2010 August.). *Qualitative innovations in CAQDAS* (Working Papers #002 & 010). CAQDAS Networking Project, Department of Sociology, University of Surry, UK. Retrieved from http://www.surrey.ac.uk /sociology/research/researchcentres/caqdas/support/choosing/index.htm

Lind, E. A. & Tyler, T. R. (1988). *The Social Psychology of Procedural Justice*. New York, NY: Plenum Press. doi.org/10.1007/978-1-4899-2115-4 Abstract retrieved from https://www.ncjrs.gov/App/publications/Abstract.aspx?id=118907

Lynn Jr., L. W., Heinrich, C. J., & Hill, C. J. (2001). Improving governance: A new logic for empirical research. Washington, DC: Georgetown University Press.

MEDROPLAN. (2013, June 24-25). *Drought Management Guidelines in the Mediterranean Region*. Instituto Agronómico Mediterráneo de Zaragoza, CIHEAM, Spain. Meeting on *Strengthening National Capacities to Manage Water Scarcity and Drought in West Asia and North Africa*. [Gabiña, D., coordinator]. Beirut, Lebanon. Retrieved from https://sustainabledevelopment.un.org/content/documents/2191Drought_management_guidelines_CIHEAM.pdf

Mackenzie, J. (2008, 3rd Quarter). Water down: The role of public participation in Australia water governance. *Social Alternatives 27*(3), 8+. Retrieved from https://www.questia.com/read/1P3-1596767381/watered-down-the-role-of-public-participation-in

Mapuva, J. (2015, October). Citizen participation, mobilisation and contested participatory spaces**.** *International Journal of Political Science and Development, 3*(10), 405-415. doi:10.14662/IJPSD2015.052

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370-96 [Originally published] Retrieved from http://psychclassics.yorku.ca/Maslow/motivation.htm

Maslow, A. H. (1954). Motivation and personality. New York, NY: Harper and Row. Retrieved from http://s-f-walker.org.uk/pubsebooks/pdfs /Motivation_and_Personality-Maslow.pdf

Maxwell, J. (2013). *Qualitative research design: An interactive approach* (3rd ed.). Thousand Oaks, CA: SAGE Publications Inc.

McLeod, S. A. (2016). Maslow's hierarchy of needs. (Original work published 2007). Retrieved from http//www.Simplypsychology.org/maslow.html

Medellín-Azuara, J., MacEwan, D., Howitt, R., Sumner, D., & Lund, J. (2016, August 15). Economic Analysis of the 2016 California Drought for Agricultural. [blog]. UC Davis Center for Watershed Sciences. Retrieved from https://californiawaterblog.com/2016/08/15/economic-analysis-of-the-2016-california-drought-for-agriculture/

Mehta, L. (2006). Do human rights make a difference to poor and vulnerable people? Accountability and the right to water in South Africa. In P. Newell & J. Wheeler. *Rights, Resources and Accountability.* London, UK: Zed Books

Miles, M, & Huberman, M. (1994) *Qualitative data analysis: An expanded sourcebook* (2nd ed.*).* Thousand Oaks, CA.: SAGE Publications Inc. Retrieved from https://vivauniversity.files.wordpress.com/2013/11/milesandhuberman1994.pdf

Miles, M., Huberman, M., & Saldaña, J. (2014). *Qualitative data analysis* (3rd ed.). Thousand Oaks, CA: SAGE Publications Inc.

National Drought Mitigation Center. (2015a). What is drought planning? University of Nebraska-Lincoln website. Retrieve from http://drought.unl.edu/Planning/WhatisDroughtPlanning.aspx

National Drought Mitigation Center. (2015b). University of Nebraska-Lincoln website. Retrieve from http://drought.unl.edu/

National Environmental Policy Act, [NEPA] (42 U.S.C. 4321 et seq.).

O'Leary, R., Gerard, C., & Bingham, L. B. (2006). Introduction to the symposium on collaborative public management. *Public Administration Review, 66*, 6–9. doi:10.1111/j.1540-6210.2006.00661.x

Ostrom, E. (1990). *Governing the Commons.* Cambridge U.K.: Cambridge University Press.

Ostrom, E. (1998, March). A behavioral approach to the rational choice theory of collective action: Presidential Address. (American Political Science Association, 1997). *American Political Science Review, 1*(1). doi:10.2307/2585925

Ostrom, E. (2007). Collective action theory. In: C. Boix & S. Stokes (Eds.), *The Oxford handbook of comparative politics*. (186-208). doi:10.1093/oxfordhb/9780199566020.003.0008

Ostrom, E. (2008, July-August). The challenge of common-pool resources. *Environment: Environment: Science and Policy for Sustainable Development 50*(4). doi: 10.3200/ENVT.50.4.8-21

Ostrom, E. (2010, May). The institutional analysis and development framework and the commons. *Cornell Law Review 95*(4), 807-816. Retrieved from http://scholarship.lawcornell.edu/clr/vol95/iss4/15

Ostrom, E. (2011). Background on the institutional analysis and development framework. *Policy Studies Journal, 39*(1). Retrieved from https://www.scribd.com/document/155474240/Ostrom-Elinor-2011-Background-on-the-Institutional-Analysis-and-Development-Framework-Policy-Studies-Journal-Vol-39-No-1-Feb-15-Pp-7-2

Ostrom, E. (with Cox, M. & Schlager, E.). (2014). An assessment of the institutional analysis and development framework and introduction of the social-ecological systems . In P. Sabatier & C. Weible (Eds.), *Theories of the policy process.* (3rd ed.) (267-306). Boulder, CO: Westview Press.

Ostrom, E. & V. (2004, January). The quest for meaning in public choice. *American Journal of Economics and Sociology,63*(1), 105–147. doi:10.1111/j.1536-7150.2004.00277.x

Ostrom, E., Gardner, R., & Walker, J. (with Agrawal, A., Blomquist, W., Schlager, E., & Tang, S.). (1994). Rules, games and common-pool resources. Ann Arbor, MI: University of Michigan Press.

Ostrom, V. & E. (1971, March/April). Public choice: A different approach to the study of public administration. *Public Administration Review, 31*(2), 203-216. doi:10.2307/974676

Özerol, G. (2012). Evaluation of public participation towards sustainable water management: An institutional perspective. In: A. Martinuzzi & M. Sedlacko (Eds.). *Governance by Evaluation for Sustainable Development: Institutional Capacities and Learning*, (137-153). Chletenham, Northampton: Edward Elgard.

Padgett, D. (1998). *Qualitative methods in social work research: Challenges and Rewards.* Thousand Oaks, CA: SAGE Publications Inc.

Palmer, R. N., Cardwell, H. E., Lorie, M. A., & Werick, W. (2013). Disciplined planning, structured participation, and collaborative modeling–applying shared vision planning to water resources disciplined planning, structured participation, and collaborative modeling applying shared vision planning to water resources. *Journal of the American Water Resources Association, 49*(3), 614-628. doi:10.1111/jawr.12067

Paneque, P. (2015). Drought Management Strategies in Spain. *Water 7*(12), 6689-6701. doi:10.3390/w7126655

Parmar, P. (2008). Revisiting the human right to water. *Australian Feminist Law Journal, 28*(1), 77–96. Retrieved from http://www.tandfonline.com/ doi/abs/10.1080/13200968.2008.10854396

Patton, M. (2002). *Qualitative research and evaluation methods.* Thousand Oaks, CA: SAGE Publications Inc.

Patton, M. (2012). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: SAGE Publications Inc.

Pearce, F. (2015, October 9). Drought is a global problem–we need a global solution. *Guardian.* Retrieved from https://www.theguardian.com/global-development-professionals- network/2015/oct/09/why-isnt-there-a-global-body--monitor-drought

Perea, R. (2008). Participation and awareness of citizens in drought plans. In: A. López-Francos (Ed.), *Drought management: scientific and technological innovations*. Zaragoza: CIHEAM, (149-156). (Options Méditerranéennes: Série A. Séminaires Méditerranéens; n. 80). Retrieved from http://om.ciheam.org/ om/pdf/a80/00800435.pdf

Polski, M. M., & Ostrom, E. (1999). An institutional framework for policy analysis and design (Working paper W98-27). In *Workshop in Political Theory and Policy Analysis.* Indiana University. Bloomington, IN. Retrieved from http://mason.gmu.edu/~mpolski/documents/PolskiOstromIAD.pdf

Ponce, V. M. (2004, February 11). Drought facts. The Ojos Negros Research Group. San Diego State University, San Diego, CA. Retrieved from http://ponce.sdsu.edu/three_issues_droughtfacts0.html

Poteete, A. and Ostrom, E. (2004). In pursuit of comparable concepts and data about collective action. *Agricultural systems*, *82*(3), 215-232.

Prior, L. (2003). *Using documents in social research.* Thousand Oaks, CA: SAGE Publications Inc.

Priscoli, J. (2004). What is public participation in water resource management and why is it important? *International Water Resources Association 29*(2). doi:10.1080/02508060408691771#.UtsrsLTTkvw

Rawls, J. (1971). *A theory of justice.* Cambridge, MA: The Belknap Press of Harvard University Press.

Reed, M. (2008, August 28). Stakeholder participation for environmental management: A literature review. *Biological Conservation, 141,* 2417-2431. doi:10.1016/j.biocon.2008.7.014

Renn, O., Webler, T., & Wiedemann P. (Eds.). (1995). *Fairness and competence in citizen participation: evaluating models for environmental discourse*. Dordrecht, Netherlands: Kluwer Academic Publishers (Springer).

Roberts, N. (2004, December). Public deliberation in an age of direct citizen participation. *American Review of Public Administration, 34*(4), 315-353. doi: 10.1177/0275074004269288

Robinson, M. (2003, December 23). Practical justice and procedural fairness. Paper delivered at PAVE Peace Group at Sydney, AU.

Rowe, G., & Frewer, L. (2004, Autumn). Evaluating public-participation exercises: a research agenda. *Science, Technology, and Human Values, 29*(4)*,* 512-556. doi:10.1177/0162243903259197

Ryan, G., & Bernard, R. (2003). Techniques to identify themes. *Field Methods, 15*(1), 85-109. doi.org/10.1177/1525822X02239569

Saldaña, J (2008). *An introduction to codes and coding*. Thousand Oaks, CA: SAGE Publications Inc. Retrieved from http://webcache.googleusercontent.com/search?q=cache: LLEIlKwO7AEJ:www.sagepub.com/upm-data/24614_01_Saldana_Ch_01.pdf+&cd=1&hl=en&ct=clnk&gl=us

Saldaña, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). Thousand Oaks, CA: SAGE Publications Inc.

Silver, C., & Lewins, A. (2014). *Using software in Qualitative research a step-by-step guide* (2nd ed.). Thousand Oaks, CA: SAGE Publications Inc.

Simons, H. (2009). *Case study research in practice*. Thousand Oaks, CA: SAGE Publications Inc.

Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: SAGE Publications, Inc.

Tole, N., Jetpurwala, Z., &Tejani, S. (2014). "Contingency planning processes–The linear model." *Contingency action plan in disaster management."* LinkedIn Learning http://image.slidesharecdn.com/contingencyactionplan-140329145417-phpapp02/95/contingency-action-plan-disaster-management-9-638.jpg?cb=1396105459

United Nations Department of Economic and Social Affairs (UN/DESA) (2018). *World Economic Situation and Prospects (WESP)2018 report.* www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESP2018_Full_Web-1.pdf

United Nations–ESCAP [Economic and Social Commission for Asia and Pacific] (2009, July 10). *What is good governance*. Retrieve from https://www.unescap.org/pdd

United Nations, Office of the United Nations High Commissioner for Human Rights [OHCHR] (2007). Good governance practices for the protection of human rights. New York, NY.

United Nations, Office of the United Nations High Commissioner for Human Rights [OHCHR]. (2013, March 13). Good governance and human rights. New York, NY. Retrieved from http://www.ohchr.org/ EN/Issues/Development/ GoodGovernance/Pages/GoodGovernanceIndex.aspx

United Nations Water. (2012). Global physical and economic water scarcity. International Decade for Action 'water for life' 2005-2015. World Water Assessment Program (WWAP), March 2012. doi.org/10.1016/j.wace.2014.01.002

van Asseldonk, E. van. (2012, August 15). Reflections on the participation paradigm. *UCL' s Interdisciplinary Research Group on Extreme Citizen Science.* [blog]. Retrieved from https://uclexcites.wordpress.com/2012/08/15/reflections-on-the-participation-paradigm/

Vaus, D. de .(2012). *Research design in social research.* Thousand Oaks, CA: SAGE Publications Inc. (Original work published 2001).

von Korff, Y., Daniell, K., Moellenkamp, S., Bots, P., & Bijlsma, R. (2012). Implementing participatory water management: Recent advances in theory, practice, and evaluation. *Ecology and Society, 17*(1): 30. doi.org/10.5751/ES-04733-170130

Walker, E. T., McQuarrie, M & Lee, C. W. (2015). Rising participation and declining democracy. In C. Lee, M. McQuarrie, & E. Walker (Eds.), *Democratizing dilemmas of the new public participation inequalities* (3-23). New York, NY: New York University Press.

Water Act of 1985, Article 56 [Spain]. [Publicado en: «BOE» núm. 189, de 8 de agosto de 1985, páginas 25123 a 25135 (13 págs.) Sección: I. Disposiciones generales Departamento: Jefatura del Estado. Referencia: BOE-A-1985-16661].

Webler, T. & Tuler, S. (2000). Fairness and competence in citizen participation: theoretical reflections from a case study. *Administration & Society, 32*(5), 566-595. doi:10.1177/00953990022019588

Webler, T., & Tuler, S. (2002). Unlocking the puzzle of public participation. *Bulletin of Science, Technology & Society, 22*(3), 179-189. doi:10.1177/02767602022003002

Wildavsky, A. (1979). Citizens as analysts. In *The art and craft of policy analysis* (252-279). UK: Palgrave Macmillan. doi:10.1007/978-1-349-04955-4_12

Wilhite, D., Hayes, M., Knutson, C., & Smith, K. (2000). Planning for drought: moving from crisis to risk management. *Journal of the American Water Resources Association, 3*(6), 697-710. doi:10.1111/j.1752-1688.2000.tb04299.x

Wilhite, D., Sivakumar, M., & Pulwarty, R. (2014, June). National drought policy managing drought risk in a changing climate: The role of national drought policy. *Weather and Climate Extremes 3*, 4-13. Retrieved from http://dx.doi.org/10.1016/j.wace.2014.01.002

Yin, R. (1981). The case study as a serious research strategy. *Science Communication, 3*(1), 97-114, Sage Publications, Inc. doi.org/10.1177/107554708100300106

Yin, R.(1994). *Case study research: Design and methods* (2nd ed.). Thousand Oaks, CA: SAGE Publications Inc.

Yin**,** R. (2009*). Case study research–design and methods* (4th ed.). Thousand Oaks, CA: SAGE Publications Inc.

Yin, R. (2016). *Qualitative research from start to finish*. (2nd ed.). New York, NY: The Guilford Press.

Ziervogel, G., Shale, M., & Du, M. (2010). Climate change adaptation in a developing country context: The case of urban water supply in Cape Town. *Climate and Development, 2*(2), 94-110. doi.org/10.3763/cdev.2010.0036

Appendix A: Précis of Documentation Worksheets

Document 1–Australia

TITLE OF DOCUMENT: Response to drought in South Australia: A case study in adaptive management.	
Author(s): Consortium of research and education contributors	Affiliation: International Centre of Excellence in Water Resources Management
Date of publication: May 2012	Peer reviewed: UNK
Type of document: Compendium of various workshop presentations	Purpose: Workshop presentations
Focus of document: Workshop focused on four basic matters: 1) identify keys to successful collaboration; 2) determinate effective means for Government to engage the public during high stress; 3) identify outstanding high priorities to facilitate response to future resource stress; 4) disseminate lessons learned.	
Relevant keywords: Climate adaptation	
TRUSTWORTHINESS	
Funding sources: Centre supported by Federal grant money	
Original research or secondary sources: Group effort	
COMMENTS: Document review does include "Small Group Discussion Summary"	

Document 2–Brazil

TITLE OF DOCUMENT: Drought preparedness in Brazil	
Authors: A. Gutiérrez N. Engle E. De Nys C. Molejón E. Martins	Affiliation: World Bank Group World Bank Group World Bank Group World Bank Group Fundação Cearense de Meteorologia e Recursos Hídricos (FUNCEME)
Date of publication: 2014	Peer reviewed: YES
Type of document: Journal article–*Weather and Climate Extremes*	Purpose: Case study
Focus of document: This case study focuses on preparedness approaches and that are both short-term and long-term gaps which decision-makers need to address.	
Relevant keywords: drought policy, water resources, climate change, resilience, adaptation	
TRUSTWORTHINESS	
Funding sources: Conducted by the World Bank and funded in part by the Spanish Fund for Latin America and The Caribbean.	
Original research or secondary sources: Interviews with key experts and stakeholders, as well as document analysis.	
COMMENTS:	

Document 3–Cape Town, Africa

TITLE OF DOCUMENT: Climate change adaptation in a developing country context: The case of urban water supply in Cape Town	
Author: G. Ziervogel M. Shale M. Du	Affiliation: • University of Cape Town, Stockholm Environment Institute • University of Cape Town, Stockholm Environment Institute • Environmental Resources Management China
Date of publication: published on-line, 2011	Peer reviewed: YES
Type of document: Journal article–*Climate and Development*	Purpose: Case study
Focus of document: This article focuses on the processes that impede or facilitate climate change adaptation.	
Relevant keywords: adaptation, Cape Town, climate change, South Africa, urban water security, water management.	
TRUSTWORTHINESS	
Funding sources: None listed	
Original research or secondary sources: Review of adaptative literature and conducting semi-structure interviews of 13 "actors" and then extracting key themes and responses [none of the actors were members of the "public."]	
COMMENTS:	

Document 4–Iran

TITLE OF DOCUMENT: Climate mitigation strategies drought crisis in Iran	
Author(s): H. Lotfi [Asst. Professor] M. Nahavandian [Student] I. Mohseninia [Student]	Affiliation: Islamic Azad University of Garmsar; Garmsar, Iran
Date of publication: 2016	Peer Reviewed: YES
Type of document: Paper: *2016 WEI International Academic Conference Proceedings*	Purpose: Conference presentations
Focus of document: Discussion of drought strategies with regards to food security and sustainable economic development in the agricultural sector	
Relevant keywords: Arid, drought, climate, Iran	
TRUSTWORTHINESS	
Funding sources: none listed	
Original research or secondary sources: Original research: "Library and field methods used to collect and gather information."	
COMMENTS: The translation of this article is difficult to read, but it is usable. This is a copy of the paper presented at the Conference; no other version is available on-line.	

Document 5–Spain

TITLE OF DOCUMENT: Drought management strategies in Spain	
Author: P. Paneque	Affiliation: Universidad Pablo de Olavide; Seville, Span
Date of publication: 2015	Peer reviewed: YES
Type of document: Article: *Water*	Purpose: Information
Focus of document: Analysis of the evolution of drought management: What are the keys to changes in drought management strategies in Spain?	
Relevant keywords: Water Framework Directive, water policies, risk, drought	
TRUSTWORTHINESS	
Funding sources: "Author declares no conflict of interest."	
Original research or secondary sources: Critical review of Spanish legal framework, includes existing literature	
COMMENTS:	

Document 6–National Drought Policies

TITLE OF DOCUMENT: Managing drought risk in a changing climate: The role of national drought policy	
Author(s): D. Wilhite M. Sivakumar R. Pulwarty	Affiliation: School of Natural Resources, University of Nebraska
Date of publication: 2014	Peer reviewed: YES
Type of document: Article: *Weather and Climate Extremes*	Purpose: Informational
Focus of document: Effectiveness of reactive drought management vs. drought risk reduction planning from a national policy [global] perspective.	
Relevant keywords: Drought policy, drought preparedness, drought planning, drought management	
TRUSTWORTHINESS	
Funding sources: none listed	
Original research or secondary sources: Original research	
COMMENTS: These authors are often cited in other water resources articles, especially Wilhite.	

Considered but Not Used

Argentina

TITLE OF DOCUMENT: Water management and climate change in Buenos Aires Metropolitan Area, Argentina	
Author: E. Lentini [Asst. professor] [seven "contributing specialists"]	Affiliation: University of Buenos Aires
Date of publication: 2016	Peer reviewed: Conference papers are double-blind reviewed
Type of document: Monograph: *International Conference on Water, Megacities and Global Change*	Purpose: Conference paper
Focus of document: Treatise addresses climate change impact on Buenos Aires metropolitan area.	
Relevant keywords: none listed	
TRUSTWORTHINESS	
Funding sources: none listed [hosted by UNESCO]	
Original research or secondary sources: Secondary documentation	
COMMENTS: Includes information about water and waste water; agency oriented.	

Considered but Not Used

China

TITLE OF DOCUMENT: Drought adaptation in the Ningxia Hui autonomous Region, China: Actions, planning, Pathways and Barriers	
Author(s): J. Yang C. Tan Shijin Wang S. Wang Y. Yang H. Chen	Affiliation Cold and Arid Regions Environmental and Engineering Research Institution, Chinese Academy of Sciences, Lanzhou, China
Date of publication: 2015	Peer reviewed: YES
Type of document: Article: S*ustainability 2015*	Purpose: Information
Focus of document: Discussion of drought, and its impact and exiting adaptation barriers.	
Relevant keywords: Drought, adaptation actions and planning, adaptation barriers, adaptation pathway, Ningxia Hui Autonomous Region of China.	
TRUSTWORTHINESS	
Funding sources: Grants from National Basic Research Program of China (973 Program). "The authors declare no conflict of interest."	
Original research or secondary sources: field visits, questionnaires and *in situ* inspections 2012-2014	
COMMENTS: Only brief reference to participatory process.	

Appendix B: Emerging Themes

Emerging Themes: New Themes or Integrated into Categories for Case Analysis

Document Number	Theme words/phrases
Document 1 South Australia	• Identify priorities for **new research** (p. 2) • **Scientists** need to build trust with the community and the decision-makers (p. 21) • There is a **need for scientists** as part of the decision-making process (p. 21) • Information was disseminated through **media releases** and **websites** (p. 4) • The role of **science should be robust** and should include economic and social science p. 18) • Science interpretation is critical to **political decision-making** (p. 21) • "**Better integration** needed between departments/states etc." (p. 30) • **Commonwealth does not provide funding** for monitoring during crises (p. 30)
Document 2 Brazil	• **Early warning** and **monitoring systems** need to be better coordinated to foster efficient and informed decision-making (p. 101) • **Integrate science** and **monitoring functions** to support a broader drought policy (p. 104) • The System does not have robust and dedicated funding mechanisms to address droughts; states largely depend on these dwindling federal resources and they **lack adequate funding mechanisms** (p. 105) • Disaster declaration can be **very politically** and directed to poorly targeted responses (p. 102) • "Water is still used as currency for **political interest** and profit" (p. 104) • There are opportunities for funding for drought preparedness; however, "these will require **bold political action** and could take an extended amount of time" (p. 105) • There is **limited coordination** between various government efforts (p. 105) • Improvement requires **leadership** and guidance at high levels (p. 105)
Document 3 Cape Town, Africa	• City-wide climate protection was halted due to a **lack of resources** coupled with higher priorities (p. 96) • **Scientific knowledge deficient** because of **constrains on resources** and the lack of capacity to integrate (p. 95) • **Relevant scientific data is not available** to decision makers (p. 105) • **Organizations lack commitment** to new, non-traditional ways of water resources planning (p. 94) • **Institutional incoherence** makes climate change inherently **political** (p. 105) • **Municipal managers lack training**, especially climate change literacy (p. 96) • **Lack of dialogue** between and within scales, and levels of government (p. 97) • Because of **problems in governance** and **leadership** in government departments, local authorities **lack the ability to translate legislation and policy into practice** (p. 99)
Document 4 Iran	• Having a "real picture" **[information]** of drought impacts is essential for the purpose of policy and the calculation of GDP (p. 87) • Because of **inadequate equipment** and **poor communications**, **data are often "unauthentic"** [inaccurate] (p. 88)

Document Number	Theme words/phrases
	• **Acquisition of quality equipment,** needed to determine the status of a drought is on-going (p. 88) • Decision-makers at all levels need a "good system for collecting **information**" (p. 88) • Analysis of strategies show the weakness of the current management system including the **lack of coordination** with related agencies at the local, provincial and national level (p. 82) • The government's "proposed rescue plan" includes **training people** (p. 82) • One element of drought management strategies is to determine the role of **social media** (p. 82)
Document 5 Spain	• One of the obstacles to implementing risk-based approach is a large **gap between legislation and scientific knowledge** (p. 6698) • Public administration plays the leading role and must also **rely on the experience** and **specialization** of the task forces (p. 6697) • The discourses the **media** construct are reflected in the formation of coalitions of stakeholders, and their impact on public opinion (p. 6697)
Document 6 National Drought Policies	• Governments must adopt policies that integrate **cooperation** and **coordination** at all scales (p. 5) • Scientists and policy makers often disagree about the **timing of droughts**–when do they start, when do they end (p. 5) • Sound decision-making depends, in part, on **climate information** and how it is processed by the individuals (p. 7) • Public information official who is familiar with local **media's** needs and preferences (p. 12)

Appendix C: Quotations and Restatements that Indicate Trustworthiness of the Research

RQ1 and RQ2

RQ 1: What Is the Role of Public Participation in Drought Preparedness Planning when Actions are Proactive?

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
Dr	- Unlike other natural disasters, droughts are hard to manage because it is difficult to recognize when it starts and when it ends) - It is a "creeping phenomenon (p. 10)	- Drought is a 'creeping' phenomenon and is not detected until it is advanced and wide spread (p.96) - Droughts have exacerbate many social problems (p. 97)	- Water is necessary for survival and basic human dignity (p. 94)	- Drought is a recurrent phenomenon in the past two decades (p. 89) - Drought in Iran indicates spatial growth and distinct degrees of intensity (p. 90)	- Droughts are natural and extreme in character; spatial; intense, and sufficient to bring about impacts (p. 6689) - Drought is context-dependent which makes a shared definition problematic (p.6689) - *Drought*: temporary and natural; *water deficit*: temporary and anthropic;	- The effects of drought accumulate over time; the onset and end are difficult to determine (p.5) - There is an absence of a universal definition of drought (p. 5) - Drought impacts are non-structural and extend over large areas (p. 5) - Drought scarcity [human induced]: Demands exceed supply even in

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
					scarcity: permanent and anthropic (p. 6689)	normal years (p. 6) - "No two droughts are identical" (p. 6)
DrPng	- Evidence based, adaptive [plan development and implementation] was essential because of the nature droughts (p. i) - Planning for drought needs to be continuous even during non-drought periods; this is essential (p. 30) - Maintain a long term vision and plan for the next drought (p.30)	- Drought planning is shifting away from ad hoc drought relief and response to proactive, risk management approach (p. 97) - There is a growing interest to improve coordination, and institutionalizing drought planning into a coherent policy (p. 95) - It must be kept in mind that there cannot be one "blueprint solution" (p. 99)	- Urgent need for water resource planning to incorporate climate change (p. 100) - Urban water management strategies need to be flexible and adaptive (p. 94)	- Water resources planning and management strategies are required to offset drought related effects (p. 85) - Plans must be considered for each region or province (p. 86) - Assessment should be continuous and the response plan updated (p. 86)	- The practices for drought planning and management currently in force need to be revised and a preventive approach adopted (p. 6696)	- Evaluate the plan for effectiveness and revise it to keep current (p. 9) - "The planning process can be adapted to the current institutional capacity of developed and developing nations" (p. 13) - "Drought planning can be defined as actions taken by individual citizens, industry, government and others before drought occurs with the purpose of

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
						reducing or mitigating impacts and conflicts arising from drought" (p. 9)
ProPng	- It is essential before the next drought that priorities are identified, including potential impacts from climate change (p. ii) - As drought conditions worsened; instructions were issued by the Cabinet that led to the phased and adaptive approach, from crisis to recovery to preparedness (p.16)	- Drought preparedness and policies can increase adaptive capacity and resilience of water resources (p. 95) - Proactive, risk management can reduce the cost of recovery, and economic losses (p. 95) - "Proactive, risk-based approaches do not develop overnight" (105)	- "It becomes clear that adapting water supply to climate change is critical, especially as many water supply measures require longer term planning" (p. 95)	- The drought preparedness strategy should be comprehensive, continuous, and integrated at all levels (p. 85) - To minimize drought and water crisis to future agricultural development, it is important to integrate water resources into preparedness and management strategies (p. 81)	- The implementation of new planning and management approaches are still being resisted and substantial inertia exits (p. 6696) - The EU has noted that key elements for the management of scarce water resources and drought are being "poorly implemented (p. 6698)	- The process should be viewed as ongoing and plans modified as necessary (p. 13)
PP	- It is important to determine the key to	- Ceará's Committee to	- "Identified areas in which	- To minimize drought impacts to	- "Preventative" or anticipatory	- Improve public knowledge about

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
	success successful collaboration (p. 2) - Drought response was support by good communication and engagement of a range of individuals (p. 4) - Despite the "initial reluctance," staff attended meetings and set up dialogue with the community (p. 12) - Important to recognize and response to local issues (p. 12) - Water customers satisfaction with the drought response expressed that	Combat Drought seeks to coordinate emergency activities and response with the participation of local, state, and federal stakeholders (p. 96) - To reduce conflicts, vulnerability and resilience, assessments need to come before the crisis in order to create dialogs amongst stakeholders (p. 104)	collaboration and communication flows were in place as well as those areas where there is no engagement or weak information flow" (p. 104) - Diverse groups can help develop the planning process: identify vulnerable sectors and adapt initiatives (p. 100)	farming, sustainable practices should be adopted which, include public awareness about water scarcity and the use of indigenous knowledge (p. 85) - Strategies and policies related to impact reduction should include: public information, education and public awareness (p. 86) - "Working group will include experts on specific topics that insight and approaches to participatory methodologies used to develop the	approach, facilitates active participation (p. 6690) - Measures that can be taken to manage and mitigate impacts of a socio-economic drought, requires real and active participation mechanisms. (p. 6698) - "Potential sources of conflict must be resolved during normal periods. By engaging stakeholders early on" (p. 6697)	the plan, build consensus, inputs, and resolve conflicts. (p. 9) - The process should include and accommodate all stakeholders or interest groups (p. 12) - "Partnering with local communities on drought risk management and involving them at all stages in mitigation of drought impacts is vital and also resource-intensive" (p. 12)

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
	communications were an important element (p. 15) - "Each region is different and requires a tailored community engagement approach" (p. 22)			views of stakeholders" (p. 86)		
Inst	- Invest in the community; give individuals time to take the lead; teach them how to deal with people who don't get what they want; how to engage in a political bi-partisan way (pp. 28-29)	- Institutionalizing risk management and proactive planning can improve disaster response and recovery (p. 96)	- Develop priorities, identifying the nexus between formal and informal institutions, and facilitate the engagement of "civil society" (p. 97) - Circumstances impeding adaptation activities: weak cooperation	- "Increase institutional mechanism for drought management" (p. 84) - For planning and implementation of water and drought management policies, institutional coordination and communication should be integrated in nation strategies (p. 87)	- "The methodological approach of institutional analysis, facilitates the examination of the legal, political and administrative structures and processes that affect decision making" (p. 6690)	- Greater institutional capacity focuses on improved coordination and collaboration within and between levels of government and others with a vested interest in drought management (p. 8)

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
			between institutions in urban water provision (p. 104) - Building institutional capacity through policy, practice and people that facilitates engagement and implementation (p. 106) - Institutional context needs to be understood (p. 97)			
FJ	- It is essential to "supply potable water quality to meet the critical human needs of all … living in the Water Security Zone, at all times (p.	- Water is a limited natural resource and an inalienable public good (p. 98) - The uniqueness, and issues faced by each	- Address the needs of the poor - Attempts to redress inequitable access to water (p. 95)			- "To make fair and equitable decisions," the right people, who have an understanding of the process and have adequate data, need to be

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
	8) - "Hard fought negotiations ensured that critical human needs were met (p. 11) - High government official mediated between banks and farmers to avoid farm receivership. (p. 13) - A number of programs and actions were initiated to serve rural communities (p. 17)	municipality and community must be appreciated to create appropriate solutions for water security (p. 99)	- "A citizen's access to water has been recognized as a constitutional right" (p. 106)			brought together (p.9)
UfUj			- *Anticipatory adaption is seen as a government responsibility*; it acts on behalf of the collective which does not		- Article 58 (1985) included provisions for "forced and urgent expropriation of property and water rights 'for the	

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
			always agree with the state (p. 97		general interest'(p. 6691) - There is a fear that water resources will be privatized as a public resource and used *de facto* (p. 6697)	

Note: Codes are delineated in Tables 5 and 6
Page numbers correspond to documents in Appendix A.

RQ 2: What is the role of public participation when actions are taken during an extant drought in a reactive, crisis mode?

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
RePng		- Water scarcity and drought has historically been dealt with through emergency response and large infrastructure works (p. 95) - Droughts are usually responded to [reacted to] rather than there be prioritizing strategic and proactive approaches in the first place (p. 97) - Proactive approaches "have thus far eluded some decision-making processes throughout the		- Despite the potential for responding to drought, performance is lower than expected (p. 88) - Fails to integrate forecasting and damage assessment (p 83) - Crisis management is costlier than risk management (p. 82)	- In recent decades, the reactive approach has been boosted by the publication of drought decrees (p. 6691) - For decades the 'traditional hydraulic paradigm' has been reactive (p. 6691)	- There is an "increasing worldwide concern about the ineffectiveness of current drought management practices that are largely based on crisis management" (p. 4) - Crisis management which incorporates relief payments, increases vulnerability by reducing self-reliance and dependency; this should only provide a "safety net" (p. 4) - The reactive approach of

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
		country" (p.106)				assistance programs does not require behavioral or resource management changes (p. 7)-
PP		"Disconnection with the population affected by the droughts, and changes in priorities make many regions even more vulnerable" (p. 103) - Formalized vulnerability assessment only involves several academic institutions; inference is, no community members are included (p. 102)			- A reactive approach is implemented once drought is declared; it is inefficient and leaves little time to consider alternatives and stakeholder participation (p. 6690) - One of the major obstacles for implementation of a risk-based approach is the need for "new values" in public participation	- "Conflict within and between countries are growing over access to a safe and dependable water supply" (p. 5) - Vulnerability is apt to change (increase or decrease) in response to social factors (p. 5)

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
					mechanisms (p. 6698)	
Inst		-"Institutional weaknesses are sometimes evident in terms of personnel and necessary capabilities to operationalize these proactive approaches" (p. 103) - "There is not a clear drought institutional framework" (the responses are mainly reactive, short-term) (p. 103)	-Institutional incoherence is symptomatic of complex problems which make climate change inherently political (p. 105) - One of the major forces identified as impeding adaptation actions was weak cooperation between institutions in urban water provision" (p. 104)	- An analysis of strategies shows weakness of current drought management include lack of coordination and institutional activities (p. 82) - Most institutions have not completed their assigned tasks (p. 88) - Institutional coordination and communication should be integrated into national strategies. (p. 87)		Governments and communities often lack capacity to deal with droughts. Institutions are simply not in place. Such systems risk being driven by a "disaster response" rather than being part of the learning needed to ensure resilience (p. 13)
FJ	None stipulated	None stipulated	None stipulated	None stipulated	None stipulated	None stipulated
UfUj	- Slow response by the Australian Government cost	- Diffused populations, and rain-sustained	- "High numbers of informal dwellers have poor access	- The recent drought has caused serious economic and social	- Civil organizations are at a disadvantage	- Reactive practices only treat the symptoms (impacts)

Code	South Australia Doc. 1	Brazil Doc. 2	Cape Town, Africa Doc. 3	Iran Doc. 4	Spain Doc. 5	National Drought Policies Doc. 6
	communities "dearly" (p. 13)	farmers in Ceará have no reliable access to water (p. 98-99) - Ceará is one of the poorest states. People living outside the cities are disconnected from perennial water supplies, and are extremely vulnerable to droughts (p. 99) - Groups of individuals depend on reactive management of their water which is not reliable (p. 99) - Droughts for these populations are managed mostly via reactively means (p.	to water … These communities often live alongside wealthy areas with access to cheap reliable water supplies" (p.95) - Risk environments affect poor and marginalized groups the most (p. 97) - Informal dwellers have poor access to [cheap, reliable] water supplies vs. residents of wealthy urban areas (p. 97) - Tariffs on water and electricity still benefit wealthy	problems; the most vulnerable are nomadic farmers and herdsmen Most farmers and ranchers are heavily in debt (p. 87) - Economic impacts are widespread, and multilateral and sub-sector; most of the time ignored unless severe. Official statistics do not reflect the real effects (p. 87)	with regards to social and media support; this impacts their ability to influence policies (p. 6698)	of drought rather than the underlying causes for the vulnerabilities associated with impacts (p. 4) - Crisis management which incorporates relied payments increases vulnerability by reducing self-reliance and dependency (p. 4) - The reactive approach of assistance programs does not require behavioral or resource management changes (p. 7)

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		99)	suburbs (p. 99) - The state can use water security as a weapon of coercion when faced with environmental risk (p. 97)			

Note: Codes are delineated in Tables 5 and 6
Page numbers correspond to documents in Appendix A.