FARMERS IN AN URBAN DESERT: SAN DIEGO COUNTY FARMERS’ IDENTITY CONSTRUCTION AMIDST A SHIFTING REGULATORY ENVIRONMENT AND WATER SCARCITY

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Farmers in an Urban Desert: San Diego County Farmers' Identity Construction

Amidst a Shifting Regulatory Environment and Water Scarcity

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DEDICATION

This thesis is dedicated to all the people who helped me find my footing in San Diego.
What you do today might feed ya tomorrow,
So you better do something tomorrow and it might feed ya the next day…
You gotta keep movin’.

-3rd generation San Diego County avocado farmer
ABSTRACT OF THE THESIS

Farmers in an Urban Desert: San Diego County Farmers’ Identity
Construction Amidst a Shifting Regulatory Environment and
Water Scarcity
by
Rosemarie Ann Clark
Master of Arts in Anthropology
San Diego State University, 2010

This thesis focuses on a sample population of San Diego County farmers. Agriculture remains one of the top economic enterprises in the county, therefore a deep understanding of this group of the utmost importance. Currently, there is much literature written about and for San Diego County farmers which employs research methodologies such as surveys, focus groups, and listening sessions, etc. This thesis uses a qualitative approach with semistructured interviews as the main research methodology to describe San Diego County farmers’ perceptions of water and regulations, as well as their sense of collective identity.

The history and background of California’s water, agriculture in San Diego County, and the regulations which most affect those interviewed are discussed. Literature focusing on the history of water in anthropology, livelihood, and the local Slow Food movement is also reviewed and used to better explain the results from this study.

After conducting semi-structured interviews and analyzing transcripts, it was found that San Diego County farmers have specific perspectives on water and regulations which are influenced by the crop type farmed. San Diego County farmers were also found to collectively identify as a community of farmers and actively distinguished themselves from other professions.
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Throughout the duration of this thesis project I was supported by a number of people, whom I wish to thank. I would like to first thank all San Diego County farmers who took time to speak with me, as well as some members of the San Diego County Farm Bureau. Without their help and candid responses this research would have remained only an idea.

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CHAPTER 1

INTRODUCTION

A love of the land, and a passion for a lifestyle that is threatened. An appreciation of nature, and a resilient personality that happily welcomes new challenges. These are all characteristics of San Diego County farmers. Heavily regulated, financially burdened, worried that resources will be cut back and a family’s livelihood will soon end. These are also characteristics of San Diego County farmers. In this thesis, I seek to better understand what it means to be a San Diego County farmer in the present day. Currently, the prominent issues in most San Diego County farmers’ lives revolve around water, its availability, its quality, and the regulations that manage that water. The regulations that are most prominent in the lives of San Diego County farmers are those that regulate the quality of the water running off their property, which will be discussed in detail in the following pages. As the availability of water, and the quality of that water are constantly changing, these regulations become a major issue for farmers in this area. Regulations that monitor water running off a farmer’s property are capable of causing a farmer financial hardship, as the fees and the cost of compliance for some regulations can be quite steep.

HOW ANTHROPOLOGY IS USEFUL FOR THIS RESEARCH

Anthropology (Kottak 2006; Salzman and Rice 2004) is a holistic discipline in nature, meaning it has the ability, as a broad discipline, to offer a many angled approach to a single issue. “Anthropology strives to maintain the holistic perspective on several levels, recognizing that each part of culture is connected to and influenced by the other parts and by the whole, that the past is connected to the present (and the future), and that each of the four subdisciplines is inextricably bound to the others” (Salzman and Rice 2004: 18). In this thesis, I am studying how multiple issues affect San Diego County farmers. Anthropology has also been a pioneer in the realm of qualitative methods. Cultural anthropology uses ethnographic methods to gain insight into a situation or issue that otherwise would have gone unnoticed and unrecorded. For this research, in-person interviews were the most appropriate
method of data collection, and qualitative methods common to the discipline of anthropology were used to analyze the data (to be discussed in more detail in the following sections).

In introductory classes to anthropology, we are taught about the emic (insider’s) and the etic (outsider’s) viewpoints. Having the opportunity and challenge of conducting original research for my thesis has allowed me to put these elementary concepts into practice. I have striven to understand the emic (insider’s or farmer’s) perspective through lengthy interviews with San Diego County farmers. Also applicable from the discipline of anthropology is the concept of cultural relativity, which means to understand each culture, or sub-culture from its own perspective. In other words, this concept means not to judge another culture, or sub-culture, from your own often differing perspective. In this way, I sought to understand San Diego County farmers without judgment or bias, or as how they understand themselves and the issues affecting them.

Applied anthropology is tasked with putting into practice anthropological perspectives, theories, and methods in order to better understand a particular relationship(s) or situation(s) in the present day (Edelman and Haugerud 2005; Kottak 2006: 25-26). Applying anthropology in today’s world is important as it serves to cement the discipline of anthropology as a useful and necessary mode of thought, which can prove helpful for many communities, agencies, and non-governmental organizations. Specifically concerning San Diego County farmers, the information found from this thesis research can be helpful to such groups as the San Diego County Farm Bureau (SDCFB; see Appendix A for a list of acronyms), the San Diego Regional Water Quality Control Board (Control Board), the San Diego County Water Authority (Water Authority), the Metropolitan Water District of Southern California (MWD), as well as to some larger national organizations whose decisions affect farmers. Engaging in applied anthropology has allowed me a greater understanding of a situation that is in flux, and a group that is not always completely highlighted when important decisions are being made.

Water was chosen as a crucial component of this research early on in the developmental stages of this thesis study. As water is such an essential element to everyday life, it was originally thought that centering interview questions around water would perhaps allow for an easier flow in the interview session. Early on, I debated between interviewing and studying domestic water users or agricultural water users as my study population. As
water is truly essential to the livelihood of all San Diego County farmers, it proved to be a perfect starting point for interview questioning, common ground on which to relate to, and also a great entry point for understanding San Diego County farmers’ identities, or how they understand themselves as farmers.

**WHY THIS RESEARCH IS IMPORTANT**

San Diego County farmers as a group have received much attention in recent news and in some texts (Bagley 2009; Bender n.d.; Burge 2009; Cook 2009a; Cook 2009b; Fikes 2009; Larson 2007; Larson 2009). Nevertheless, many of the regulatory decisions that have been taken have made the lives of San Diego County farmers more difficult, and have ultimately begun to threaten the very livelihood of some (especially tree crop) farmers. My goals with this study are to show the current situation (i.e. water cutbacks, water rates, discount programs, regulations, permits, fees, organizations) from the perspective of the San Diego County farmers themselves and to explore the collective identification of San Diego County farmers with farming as a livelihood.

It is important to know how San Diego County farmers understand themselves as farmers, and how water and regulations may influence that understanding. This knowledge is useful especially to organizations that may impose more or differing regulations on San Diego County farmers, as the regulations may shift the way San Diego County farmers understand themselves. A person or groups’ identity, or their understanding of themselves is important as this may influence the way they go about their everyday activities, which is crucial to understand since agriculture ranks fifth in terms of economic impacts in San Diego’s economy (American Farmland Trust n.d.: 5).

While research and surveys have been conducted to monitor the number and percentage of particular crops, growth rates, and the economic impact of agriculture as a whole on San Diego’s economy, more personal and qualitative research is still needed. Some research has been conducted by organizations such as the University of California Cooperative Extension office in the form of focus groups and interview sessions. However, this study hopes to reach deeper by interviewing San Diego County farmers individually and in locations in which they are most comfortable (often times their own farms).
INTRODUCTION OF CHAPTERS

In the remaining chapters of this thesis, this study will be described in full. In Chapter 2, applicable literature and authors will be explained and discussed. This chapter will focus on the history of water in anthropology, ideas concerning local food versus organic or industrial food, the concept of community economy, and farming as a form of livelihood.

Chapter 3 discusses the research methodology used for this study. Preliminary research, interview methods, interview space or location, the interview as performance, post interview methods, and fieldnotes will be discussed.

Chapter 4 discusses the history, background, and relevant organizations in San Diego County.

Chapter 5 discusses the regulatory environment pertaining to water in the county and the discount surplus water programs available to San Diego County farmers. A firm grasp of the regulations which are most prominent in the lives of San Diego County farmers is as important as having a clear understanding of their history. Understanding prominent regulations and discount programs is also necessary as they affect the way San Diego County farmers understand themselves and their water source(s).

Chapter 6 discusses the San Diego County farmers’ perspectives of agricultural water and water-related regulations.

Chapter 7 focuses on how San Diego County farmers view themselves, the similarities they believe make their collective group a cohesive unit, and the differences they believe separated them from other groups.

Chapter 8 concludes the study by summarizing all conclusions found. Any limitations are presented, as well as possible future projects using this research.
CHAPTER 2

LITERATURE REVIEW

Anthropology is especially useful when looking at issues relating to water. A recently published literature review by Orlove and Caton in 2010 is quite helpful when studying this matter. Orlove and Caton emphasize the connectivity and materiality of water (2010: 402-404). By the connectivity of water they mean “the articulation of the multiple social domains in which water is used…Water connects different domains of social life to each other in ways that are not haphazard or accidental because they depend on each other” (Orlove and Caton 2010: 402). By the materiality of water they mean “the physical attributes of water that affect its relation to the human body and environment and that shape its use” (Orlove and Caton 2010: 403). Both concepts are relevant to this study as farmers are dependent on their supply of agricultural water. However, farmers of varying crop types may focus on differing aspects of water (e.g. availability, quality, salinity). Water used in agriculture in San Diego County is not separate from other, often competing uses, especially in residential and industrial spheres. Water links farmers to the whole history of population and economic growth in southern California, a history that is entirely dependent on the availability of water, and to the regulatory environment to which San Diego County farmers are subject.

The materiality of water is elementary to its diverse uses by farmers, as is shown in the discussion of how farmers of different crop types use and perceive water in Chapter 6. The necessity for water to sustain plant and animal life is shared by all farmers, but for some the ability of water to flow from their property (runoff) is most important, while for others its mineral content (especially salinity) is most relevant. Different kinds of farmers are subject to different regulations depending on how their particular use of water is perceived by regulatory agencies as similar to uses of water in other arenas (such as manufacturing).

The study of water has a long history in anthropology. Julian Steward published a comparative study of irrigation civilizations in 1955. Karl Wittfögel (1957) was not an anthropologist, but his Oriental Despotism, a study of irrigation systems and the
administration on Asian societies, had a profound impact on social science. Elizabeth Colson (1971) and Thayer Scudder (1973) began studying the effects of dam construction in Zambia in the 1950s. Clifford Geertz (1972) contrasted water governance in Indonesia and Morocco. Patrick Fleuret (1985) studied the social organization of water control in Kenya.

The study of water within the history of the discipline of anthropology has focused on how irrigation civilizations and water governance are organized. Donahue and Johnston (1998: 340-341), citing Eric Wolf (1990), distinguish between the control of water through “tributary organization” and through the market. In tributary organization, bureaucracies finance public works through tax revenue. Different agencies with distinct policy objectives define water differently and sometimes in conflicting ways. Bureaucratic institutions maintain power through the funding of water projects, which serve to “sustain their founding institutions as well as manage water resources” (Donahue and Johnston 1998: 341). In the marketplace, water becomes a commodity and water comes to have additional cultural meanings. The system for distributing water in San Diego has characteristics of both systems. It is controlled by bureaucracies and at the same time sold by those bureaucracies as a commodity. Both systems place local people in potential conflict with powerful outside forces. Donahue and Johnston’s (1998) study relates to this thesis in that many San Diego County farmers expressed frustration at the apparent disconnect between water users (farmers), and those controlling their water sources (water regulators or water agencies), which they often referred to as “politics.” As Enge and Whitehead (1989: 184-185) write about Mexico, there is often a conflict between pressures for centralization and the desire of local people to be autonomous in their decisions about how to use water.

Additional current water studies, such as those featured in the American Anthropological Association’s January 2010 newsletter reflect the ways in which “anthropologists have emerged as key participants in conversations about water use” (Anon. 2010). In that issue Wagner (2010: 5) writes that water management “occurs through the interplay of a complex network of formal and informal institutions acting at multiple levels” that requires a balance of power among diverse interest groups. The focus on people’s interaction with their water supply and its physical aspects, as well as farmers’ ability to sustain their business and remain viable in the present day echoes the focus in past and current water studies. The San Diego County farmers interviewed described a clearly felt
connection with their agricultural water supply, as well as the physical aspects of that water (e.g. availability, quality, salinity), and described themselves as resilient and efficient water users.

Much recent work on water in anthropology has focused on questions of sustainability and resilience. Bill Derman and his colleagues have analyzed the political ecology of water reform in Zimbabwe, focusing on discourses of water as a livelihood right as opposed to a commodity (Derman and Hellum 2007; Ferguson and Derman 2005). Hastrup (2009) writes the importance of rules and institutional arrangements for the resilience of what she calls “waterworlds.” The work of Paolisso and Maloney (2000; also Maloney and Paolisso 2006) is particularly relevant to this study, as they looked at farmers sense of themselves as environmentalists in connection with nutrient runoff in Chesapeake Bay. In this thesis study, many farmers expressed their feeling as “true environmentalists,” due to their careful and efficient use of their water source. This concept will be discussed in more detail in Chapter 7.

Even though the work of these anthropologists covers many different topics, there are some common themes that are relevant to the situation of San Diego farmers. One is the theme of water as a right versus water as a commodity. The recent movement toward seeing water as a right in contrast to water as a commodity discussed by Derman among others is connected to the rights of rural people to maintain farming broadly as a livelihood rather than narrowly as a system of production. In this way, the work of anthropologists is related to the work of others, such as Scoones (1998), who see the importance of livelihood as a means towards sustainability. The second theme found in the anthropological literature about struggles over water is the relationship between local people and distant powers that seek to gain control over their water. These powers may be state bureaucracies that seek to gain greater control over local decision making or private enterprises that seek to gain control over water as a commodity. In the case of San Diego, it is the bureaucracies themselves that sell water as a commodity. The third theme, which is closely related to the second, is the contrast between local understandings of water and the meaning of water to outside agencies. As we shall see, these are all relevant to the situation of San Diego farmers.

In *The Omnivore’s Dilemma*, Michael Pollan (2006) investigates the food chain of four specific and very different meals available to the American public (i.e. industrial, big
organic, pastoral, and foraging). Pollan explains that most of the meals consumed today in America are products of the industrial, or highly processed food chain and pose great risks to our health. While the organic meal has quickly risen as a choice opposing the industrial meal, Pollan explains that it is also rapidly adopting characteristics reminiscent of the industrial food chain. For American eaters who chose to “opt out” of the industrial, and the rapidly industrializing organic meal, Pollan suggests eating locally grown foods. By eating local, Pollan explains that an eater may be better able to understand more of where their food came from, and what exactly is in their food. Locally produced food may or may not be organic, however eating locally offers the consumer something that industrial and “big organic” food chains cannot: a chance to speak directly with the farmer and ask specifically where their food was produced and what chemicals (if any) were used to produce it.

This is precisely the mission that Slow Food has set for itself: to remind a generation of industrial eaters of their connections to farmers and farms, and to the plants and animals we depend on…The consumer becomes…a ‘coproducer’ – his eating contributes to the survival of landscapes and species and traditional foods that otherwise succumb to the fast-food ideal of “one world, one taste. (Pollan 2006: 259)

While eating local offers eaters a way to “opt out” of the industrial (and big organic) food chain, it also offers San Diego County farmers a way to survive and thrive despite current struggles. Many San Diego County farmers interviewed regarded diversifying their crops and selling on a more local basis as a viable option for surviving current struggles (i.e. water, regulations, finances).

Julie Graham and Katherine Gibson, writing as J. K. Gibson-Graham (2006), explore the possibilities for a postcapitalist economy in which production is based in local communities and is environmentally sustainable. San Diego County farmers’ sense of themselves as a community sharing a livelihood and their concern for protecting the environment over the long term are suggestive of some of the directions that Graham and Gibson envisioned for “subjects for a community economy” (Gibson-Graham 2006: 127), as will be discussed further in Chapter 8. Gibson-Graham (2006: 86) describe community economy as having two central tendencies, “the privileging of geographic ‘commonality’ or localism” and the sense of a “shared way of being.” These are both prominent characteristics of San Diego farmers.
Farmers in San Diego County regard farming as a way of life, or livelihood, as opposed to a “job,” which is shared among their particular collective group. Many of the farmers interviewed for this study shared similar passions, joys, and frustrations, possibly due to this shared sense of livelihood. This commonality among farmers functioned to bring them together to form a community of San Diego County farmers. According to Robert Chambers and Gordon Conway, a “livelihood comprises people, their capabilities and their means of living, including food, income and assets…” (Chambers and Conway 1991: i). This statement relates back to the shared aspects of San Diego County farmers’ lives, or their livelihood. A livelihood was also described as something one can be “born, socialized and apprenticed into” (Chambers and Conway 1991: 6), which accurately describes how many San Diego County farmers began in the farming business.

In terms of this study, livelihood relates to the collection of San Diego County farmers and their use of farming as a way of providing a living for themselves and their families. Chambers and Conway (1991) discuss how livelihoods may be socially sustainable in terms of their ability to withstand stresses and shocks to their way of life that are often times out of their control. San Diego County farmers have had stress added to their daily life due to a shortage of water, and also due to some of the regulations which manage that water. Chambers and Conway discuss that those participating in a livelihood may chose a strategy(s) for coping with these stressors. San Diego County farmers may have adopted strategy(s) for maintaining their livelihood which focus on diversification, moving, or selling their assets. Scoones (1998: 3) adds that the key question in analyzing whether a livelihood is sustainable is: “Given a particular context…what combination of livelihood resources…result in the ability to follow what combination of livelihood strategies…with what outcomes?” For Scoones, the context includes the policy setting, politics and history. For him, “Of particular interest in this framework are the institutional processes…which mediate the ability to carry out such strategies and achieve (or not) such outcomes” (Scoones 1998: 3). In San Diego County, it is important to understand how the policy context of water regulation affects the uses of livelihood resources, especially water and the money to purchase it, in order to carry out the particular livelihood strategy, including crop type, of the specialized farming found there.
Some previous research has been conducted concerning San Diego County farmers that included surveys, seminars, focus groups, and listening sessions (American Farmland Trust n.d.). The in-person interviews of this thesis research add a new dimension to the existing information on San Diego County farmers and agriculture. Performing in-person interviews, as opposed to other more quantitatively based methods of research has allowed for a different, and richer understanding of farmers, including their perspective(s) on water and regulations in San Diego County.
CHAPTER 3

RESEARCH METHODOLOGIES

PRELIMINARY RESEARCH

During the 2008-2009 academic year, I combined a literature review and background interviews with board members of the SDCFB, a member of the Valley Center Water District, and a member of the University of California Cooperative Extension Office. I also attended a monthly meeting for the SDCFB.

INTERVIEW METHODS

For this thesis, 16 interviews (both in-person and over the phone) were conducted with a total of 19 San Diego County farmers (one interview with two farmers and another with three) whose livelihoods depend on their farming operation. The first five interviewees’ contact information was provided by the Executive Director of the SDCFB, who had been interviewed previously. Additional interviewees were identified by asking for a referral at the end of each interview, which can be described as the snowball sampling technique (Bernard 2005: 192). This method was employed because the population of San Diego County farmers is scattered over a larger geographical area, and also because a list of contacts was not available. Also, mentioning the referee proved to make potential interviewees more open to the idea of an interview. The population used for this study was limited to 19 San Diego County farmers as the contacts that were being referred to me eventually became duplicates, which suggested that a particular network sum was being reached. “You get handed from informant to informant and the sampling frame grows with each interview. Eventually, the sampling frame becomes saturated – that is, no new names are offered” (Bernard 2005: 193). As I am looking to describe a variety of San Diego County farmers, it was important that I not limit myself to any one crop type (e.g. only tree crop farmers, or only livestock farmers). To that end, my sample includes at least one farmer from each of the following crop type categories: avocados, citrus (oranges, lemons), wine grapes, berries (blackberries, raspberries), sod, mushrooms, livestock (dairy, chickens), seeds, and horticulture (cut
flowers, potted plants, ornamental plants and palms). The farmers interviewed in this study had locally-based and small-scale enterprises, many of which were controlled by families over generations. They were not employees of large-scale corporations working in multiple locations.

Initial contact with a potential interviewee was made over the phone. When speaking with the potential interviewee for the first time I explained who I was, the nature of the study, and who referred them. Then I asked if they would like to participate in a voluntary interview. After an interview had been successfully scheduled, I met with the interviewee at the location of their preference, most often their office, but also at their house, farm, or farmers’ market stand.

Prior to the start of the actual interview, the consent form was explained and it was asked that the interviewee take time to read through it and ask any questions they might have. After answering those questions, the consent form was signed and returned (see Appendix B). Upon signing the consent form, it was reiterated that an audio recorder would be used for the duration of the interview. If the interviewee had no objections to this, the audio recorder began recording. A small audio recorder was used as opposed to a video recorder, as “video equipment is vastly more intrusive than a small cassette tape recorder with built-in condenser microphone” (Briggs 1986: 100). Additionally, video equipment proposed the challenge of possibly causing the interviewee to become more self-conscious, and therefore more prone to shaping their behavior in accordance with what they believe are the researcher’s goals. However, there was the chance that some interviewees may become uncomfortable and possibly more self-conscious in the presence of an audio recorder, no matter its size. As the interviews were expected to run between 30 minutes and one hour (actual interview time was between 30 minutes and 1 hour 40 minutes), there was a need to assist the interviewee in quickly becoming as comfortable as possible in order to receive the most honest and detailed answers. For this purpose the audio recorder was handled once and placed between myself and the interviewee and then not referenced for the duration of the interview. Some interviewees became visibly agitated, nervous, or uncomfortable at the sight of the audio recorder. When an interviewee became visibly uncomfortable due to the audio recorder, general idle conversation was continued for a short time (about one minute) in hopes of calming the interviewee. Once the interviewee appeared more comfortable, the
interview began. Interviewees were given the choice to have the audio recorder turned off. None, however, chose to do this.

A semistructured interviewing method was used, which “has much of the freewheeling quality of unstructured interviewing, and requires all the same skills, but is based on the use of an interview guide. This is a written list of questions and topics that need to be covered in a particular order” (Bernard 2005: 212). My interview guide consisted of questions to be asked in a particular order (see Appendix C). The questions began very basically (i.e. asking about farming in their family, the land they farmed, what crops they farmed), and then progressed to more specific questions (i.e. what types of irrigation methods and conservation methods do they employ, do these methods change with increasing water scarcity, which regulations affect their farming operation more so than others, their participation in any agricultural water discount programs), and finally returned to more basic questions again (i.e. what aspects of being a farmer are most important to them, what aspects are most frustrating). The use of an interview guide in semistructured interviewing afforded the researcher direction and control over the course of the interview, provided a set of interview questions to be asked, all while making it possible to follow leads and probe the interviewee for more detail on a given topic if need be.

**INTERVIEW SPACE OR LOCATION**

In spite of a common interview methods used, the interviews were quite varied, which is found partly in the actual space/location of the interviews, and in the interviewing process or performance itself. Fifteen of the interviews were conducted in person and one over the phone. The various locations or spaces of the in-person interviews may have affected the overall feeling of the interview. For the over-the-phone interview, my own location was in a closed room by myself with limited distractions, and the location or space that the interviewee was in, or traveling through, remained unknown.

The interviews conducted in an office were often conducted with the door closed almost all the way, or fully, thus allowing for an intimate physical space for the interview, and with both parties seated across from each other at a large boardroom style table. Most of the interviews in this environment began with some questioning of my research intentions by the interviewee. In this way, the interviewee was demonstrating a sort of power and in a way,
claiming the interview space. I answered the questions asked fully so as to create a bond of trust, and the interview began. Regardless of the questions asked prior to the start of the interview, the interviewee tended to remain somewhat skeptical of the interview itself and therefore answered the first few interview questions in relatively short sentences. After the interviewee became more comfortable with the interview situation (i.e. facial muscles relaxed, leaned back in their chair, or leaned forward if speaking about a passionate topic), their answers increased in length, intensity, and emotion.

The interviews conducted in kitchens tended to begin with both parties (the interviewee and the researcher) in a more relaxed state than the above mentioned situation, and seated across from each other at the kitchen table. Typically the family dog was present, other people (i.e. wives, employees) were present or traveling through the interview space, and overall the interviewee began the interview looking somewhat comfortable, however some still appeared skeptical about the nature of my project and the questions to be asked. Similar to the interviews which took place in an office, the interviewee’s answers to questions remained shorter in length until they became more comfortable with my presence, and the interview situation itself.

The interviews which took place outdoors on the farmer’s property were among those where the interviewee visibly seemed the most comfortable, in comparison to interviews which took place in offices and in kitchens. As with the above described interviews, the interviewee tended to answer in shorter sentences until becoming more comfortable with the researcher and the interview questions. Often during these interviews, the farmer gestured to their land, and appeared to use more body language and hand gestures when answering questions. On the other hand, during interviews on the farmer’s property, there was a noticeable increase in the number of distractions and interruptions, both by farm employees and from the everyday, mundane farm distractions (e.g. tractors, livestock, changes in sunlight, flies).

One interview took place at a local farmer’s market. While the actual space or location of the farmer’s market was clear, it was particularly difficult to set up an intimate interviewing space in which the interviewee and I could connect for 30 minutes to one hour and conduct an interview similar to what has been described above. During this interview it was critical that I remained calm and unbothered by the number of distractions so as not to
allow my discomfort or awkward feelings to negatively affect the interviewee’s comfort level. By doing so, I hoped he would remain comfortable enough to share longer, more detailed and impassioned answers and opinions.

The one interview conducted over the phone was more difficult than in-person interviews and felt overall less personal or intimate. The physical space, which I have referred to in abundance above, was not at all similar to the rest of the interviews, as the interviewee was free to move about his personal space as he saw fit. For this interview neither I nor the interviewee was able to see each other’s facial expressions and body language, therefore putting more pressure on the language, tonality, and pauses used during our conversation. During these interviews, I tried to maintain a familiar physical space, one which I could easily control, and that afforded little interruption.

Some of the key differences noticed, especially the apparent comfort level of the interviewees, appeared to be due in part to the actual space or location of the interview itself (i.e. in an office, a kitchen, outdoors, at a farmers’ market). However, the interview was the first time that I had met and spoken with most of the interviewees in person. Therefore it is possible that some of the difference may be due to personal characteristics and personality traits.

**Interview Performance**

My understanding of performance for this study, and the interviews conducted, is the actual coming together and communicating between two people, myself and the interviewee. It was important to attempt to limit the variability of the interview to only the interviewee’s answers by phrasing the interview questions in a similar manner each time, therefore allowing the difference to come from the interviewee’s own opinions and perspectives on particular topics. To this end, it was also important to represent myself in the same manner (i.e. mannerisms, politeness, use of language, gestures, body language, etc.) to each interviewee (Salzman and Rice 2004).

Another key issue in simulating a similar interview space for each interview was to limit the number of distractions present during the interview, so that both the interviewee’s and my attention could be calm, comfortable, and focused. In order to limit distractions, when the interview was first scheduled the interviewee was allowed to chose the time and
place of the interview in order to best fit with his schedule in hopes of avoiding
distraction(s). First the interviewee chose their seat, after which I sat directly across from
them (if possible), in order to remain in the interviewee’s line of sight, therefore hoping to
pull their focus more towards the interview itself. My body language used during an
interview consisted of sitting straight up with a relaxed back and keeping both of my hands in
plain sight most of the time. My hand gestures were limited to only when I found it
appropriate and necessary to better describe a situation. My eye contact was focused on the
interviewee for the majority of the interview, in order to show interest in what the
interviewee was saying. While body language and hand gestures are sometimes done
sub-consciously, I tried to maintain a particular mode of body language and hand gestures so
as to let the interviewee know that I was focused on them, and also in hopes of making the
interviewee more relaxed, comfortable with the situation, and more apt to share. By trying to
avoid unnecessary distractions and monitoring my body language, hand gestures, eye contact,
and language, I attempted to create an intimate space in which the interviewee and I could
freely discuss certain topics and share ideas.

Assisting in making the interviewee more comfortable was done in part to display
good manners and a pleasant demeanor, but also in hopes to make the interviewee more open
and willing to share information. Every interview conducted showed that the interviewee had
shorter answers in the beginning of the interview, and their answers became longer and more
detailed as the interview progressed, which I believe was due to their comfort level.
Therefore, helping the interviewee to become as comfortable as possible, as quickly as
possible was important, as I did not (often) repeat questions and followed a previously
established interview guide that dictated the questions asked and their ordering.

**POST INTERVIEW METHODS**

After transcribing the interviews, I used the grounded-theory approach to determine a
code manual. Grounded-theory was initially developed by sociologists and can be used to
effectively analyze ethnographic interview data (Bernard 2005: 492). By using the
grounded-theory approach, I first read through five transcribed interviews (each a different
crop type) and noted any potential themes or categories. This process is termed “in vivo”
coding (Bernard 2005: 493). Upon final revision of my code manual I had
produced 12 categories using inductive or exploratory coding, each with its own set of codes for particular characteristics, attitudes, words, or phrases which appeared frequently. Each code had an abbreviated version, allowing for easier coding of the transcripts. The code manual is in Appendix D. After coding each transcript, a one page, hand-written tally sheet was created which tracked the codes used and how many times they were used for each interview. This allowed trends to be more easily viewed, and examples and quotations to be more easily found.

After each transcribed interview was coded and tallied, analysis by comparison began. The first area of comparison was comparison by crop type. The 16 transcribed interviews were divided into five categories: tree crops, nursery and flower crops, vegetable and vine crops, mixed crops, and livestock.

FIELDNOTES

This research is based on interviews and limited observations rather than the full immersion of participant observation characteristic of traditional ethnographic research. Nevertheless, fieldnotes were important for the research conducted for this thesis study.

After interviewing each San Diego County farmer, I took some time to jot down my own thoughts on the interview. I noted who was with the farmer, where the farmer was and where they chose to have their interview. I also noted what was discussed (if anything) before and after each interview, and the overall perceived demeanor of the farmer throughout the interview process. My fieldnotes did help me as they served to jog my memory of what happened during the interview. Using my fieldnotes this way allowed me to take a more in-depth look at my transcripts, allowing me to “relive” them in a way, so that when analyzing I was not simply looking at a typed conversation, but also the emotion and intent behind the conversation, which would have otherwise slowly slipped away from memory.
CHAPTER 4

HISTORY, BACKGROUND, AND RELEVANT ORGANIZATIONS IN THE COUNTY

HISTORY OF CALIFORNIA’S WATER

When the Spanish settled in California in 1769, they began to change the way the landscape both looked and functioned. While those native to the area disturbed their natural environment very little (Hundley Jr. 2001: 24), the Spanish brought with them a belief that nature was theirs for the conquering, and thus the landscape began to change. As the Spanish found San Diego to be a very appropriate place for their first mission in Alta California, they quickly began the task of generating their own food. This proved to be a harder task than was first thought, as the water supply was inadequate (Hundley Jr. 2001: 35-36).

Water rights in the early times were determined by Spain’s Plan of Pitic dating back to 1783 (Hundley Jr. 2001: 40-41), a document that claimed water to be used for the benefit of the entire community. The rights of said water were to belong to the person owning the property which the water was on. Large ranchos that were established in this area were considered to be private property, and therefore the owner was able to obtain water rights for primarily domestic and livestock purposes. This water could then be used for irrigation purposes, provided that no one complained about this situation for a long period of time (Hundley Jr. 2001: 48).

The discovery of gold two years (Hundley Jr. 2001: 65) before California became the 31st state of the United States of America on September 9, 1850 marked the start of population growth in the area.

The population boomed from some 10,000 non-Indians in 1846, to 100,000 three years later, to nearly 1.5 million by 1900. The growth in numbers accompanied an even more rapid transfer of privately owned land from native Californios – the name usually applied to the non-Indian peoples of California – to in-flooding Americans as towns and cities proliferated and massive commercial and agricultural development brought revolutionary changes to land- and waterscape. (Hundley Jr. 2001: 66)
The 1849 Gold Rush, a prominent event in California water history, marked the arrival of thousands of migrants in search of fortune (Carle 2009). At the onset of the gold rush, mining using water, or hydraulic mining, was the typical method of choice as this had worked in other areas of the United States. However, in California where water was not as abundant as in other areas of the United States, water quickly became a commodity. The principle of “first in time, first in right” (Hundley Jr. 2001: 71) was adopted, as those miners who were first to arrive in an area had first choice over their water supply, as the rights of the indigenous peoples were not considered in this principle. This principle changed the way water was viewed: from a natural resource to be shared, to a commodity to be bought and sold. As water, a limited resource, was viewed as necessary for mining, it was diverted over long distances for the benefit of the gold miners using flumes. Hydraulic mining came to an end in 1884, when the Ninth U.S. Circuit Court of Appeal in San Francisco found this type of mining to be damaging to the Sacramento and Feather rivers (Carle 2009; Hundley Jr. 2001: 78-79). Some miners tried to continue hydraulic techniques even with the new orders to cease however the strictness of the regulations placed on hydraulic mining eventually made it impossible.

In 1928, the MWD was made a reality based on the push by then Pasadena Mayor Hiram W. Wadsworth to bring together regional municipalities to supply southern California with water. The MWD focused on campaigning for a larger aqueduct that would transport water from the Colorado River to thirsty southern California. The MWD also helped to pull California out of the Great Depression, as it supported the construction of many dam projects helping to increase the flow of water as well as the number of available jobs (Carle 2009; Green 2007). Due mainly to southern California’s needs during World War II, the population boomed just as water had begun to flow from the Colorado River down to southern California. Between the years of 1940 and 1970, the population of Los Angeles, Ventura, Orange, and San Diego Counties “increased two and a half times to more than ten million during the same period” (Hundley Jr. 2001: 231). Along with the water available and the population boom, other industries began to take off, such as manufacturing and other service industries. “By the late 1980s the people of urban southern California, through water and power charges, had contributed approximately 76 percent of the $351 million cost, including
interest, of constructing and operating Hoover Dam, with the MWD alone providing $96.4 million” (Hundley Jr. 2001: 323).

As the population continued to increase even after the World War II population boom, officials (mainly in Los Angeles County) began considering the building of another aqueduct. The California Aqueduct would bring in more water to southern California in addition to the water from the Colorado River Aqueduct. This was accomplished through the State Water Project (SWP) and was initiated in 1960 after a referendum on the issue was passed by a great majority of voters in the south, and rejected by voters in northern California (California State Water Project n.d.). The California aqueduct was to bring water from the Sacramento area south to just east of Santa Barbara. Here the California Aqueduct was split into two sections. The West Branch continued the short way to Castaic Lake where it would support the ever growing population of Los Angeles. The East Branch continued south to Lake Perris where it would serve the more southern California populations (Carle 2009; Hundley Jr. 2001). This is currently the water situation in southern California (see Figure 1).

**SAN DIEGO AGRICULTURAL HISTORY**

In the City of San Diego, an economic boom began in 1915, when the regional world’s fair was promoted (Bokovoy 1999: 1). This economic boom and the hope for a bright economic future for San Diego was the product of David C. Collier, as he began advertising southern California as a type of Eden with natural resources in abundance. In the early twentieth century, more port facilities were built in the hopes of increasing economic profit by exporting agricultural products. The railroad line built from San Diego to Yuma was also viewed as an important step forward as it enabled those in both San Diego and Imperial Counties to export their agricultural products. In 1917 and 1918, cotton production in Imperial County was at an all time high, and this was expected to push the region into view as the place where economic dreams of easterners could be achieved (Bokovoy 1999: 2). Agricultural and San Diego County Fair boosters advertised the prime climate and lifestyle available in this area, while hiding any issues that were considered negative. Those who hoped San Diego would become another great city on the West Coast needed to tout its agricultural potential in order to increase the population as well as economic profit (Bokovoy
The prime climate, location, and lifestyle of agriculture in southern California were further promoted by William Ellsworth Smythe, a distinguished journalist, public speaker, and developer for San Diego (Lee 1973). Smythe had many thoughts on land and agriculture, such as the “irrigated society,” as well as positive beliefs about the small family farm. Smythe also had a unique position concerning the arid climate that plagued the area of San Diego. “He believed that aridity was a blessing and not an obstacle to regional growth. Aridity signaled the need for irrigation, and irrigation brought a systematic and predictable aspect to the production of agricultural goods…” According to historian Kevin Starr, Smythe
believed the West ‘demanded irrigation,’ which would foster a ‘higher practice of cooperative citizenship that would lead to social democracy’” (Bokovoy 1999: 4). It was Smythe’s idea that if there were a large number of small (under 160 acre) family farms, that would lead to equal participation in the market and other aspects of social life. Between the years of 1900 and 1920, the West found itself in a prime situation in terms of agriculture. However, while Smythe and others had promoted the idea of multiple small family farms in San Diego in hopes of developing a sort of utopia, the opposite was coming true.

Slowly over time, more land was turned into irrigated agricultural land, as the number of farms decreased and the remaining farms became larger in size (Bokovoy 1999: 8). As agriculture played a large part in San Diego life, it was important that the water supply develop and be brought to areas where small farms and settlements were thought to prosper. Between 1915 and 1920, some small farms began to fail and ultimately sold off their land to developers, which then became large suburban communities (i.e. Mission Valley, Clairemont and Grossmont; Bokovoy 1999: 11). This trend would be continued to the present day.

Even though San Diego’s largest industry was agriculture, boosters created powerful, and sometimes erroneous, ideologies about social life, climate, and environment that contributed to their promotion of a distinct political economy in Southern California. Booster rhetoric not only aided capital formation, but convinced hundreds of thousands of Americans and immigrants to pull up their roots, move, and try to live the California Dream in the ‘Land of Sunshine.’ Without the veneer of ‘temperate,’ ‘America’s Mediterranean,’ and ‘fertile and rich,’ it is doubtful that boosters would have been able to attract immense numbers of Eastern and Midwestern Americans to what was once a vast and non-arable desert. (Bokovoy 1999: 13)

The amount of precipitation that falls on southern California, about seven to ten inches per year, has not varied much since the time of European contact. However, most of this water evaporates while the rest of it trickles down through streams and ultimately ends up in the ocean or in underground aquifers. “Over the ages, the groundwater in California’s approximately 450 aquifers increased enormously, probably reaching the total estimated capacity of 1.3 billion acre-feet, or enough to cover the entire state to a depth of 13 feet. In modern times over pumping has reduced that volume to some 850 million acre-feet, of which perhaps less than half is usable because of quality considerations and the cost of withdrawal” (Hundley Jr. 2001: 9). The water that successfully makes its way back to the Pacific Ocean is
then eventually turned into rain clouds which will again provide the little rain that southern California needs, thus creating a hydrologic cycle.

**SAN DIEGO COUNTY AGRICULTURE IN THE PRESENT**

As the cost of farming has steadily increased (in terms of water rates, labor, prices of land and energy), San Diego County farmers have taken to focusing the majority of their energy on crops which return the highest profit (County of San Diego Department of Agriculture, Weights and Measures [AWM] 2008: 5). These types of crops happen to be those that are not readily grown in other parts of the country, such as avocados, citrus, and cut flowers, due to reasons such as lack of varied terrain, different soil composition, and lack of prime climate. In fact, in California, San Diego County ranks in the top five counties in the production of avocados, oranges, lemons, grapefruit, tangerines, floriculture, nursery, eggs, fresh market tomatoes, mushrooms, and honey. San Diego County also boasts the highest producing land in terms of dollar per acre in the entire state of California ($4,963/acre) (AWM 2008: 5). In 2000, nursery and flower crops returned the highest percent dollar value (63.02%) per acreage farmed, followed by fruits and nuts (19.47%), vegetables (10.3%), livestock and poultry products (5.21%), and other crops bringing in less than 5% dollar value in revenue (AWM 2008; see Figure 2).

Currently, in San Diego County, horticulture (i.e. indoor and outdoor flowering plants and foliage) remains the top economic producing crop in the county, totaling $1,042,703,756 in 2008 (AWM 2008: 2). In fact, San Diego County ranks number one in horticulture out of all the counties that produce nursery, greenhouse, floriculture and sod crops in the United States (AWM 2008: 7). Tree crops such as avocados and citrus remained in the number two rank nationwide and increased slightly in value since 1998, with avocados remaining the top tree crop. Also interesting is that while some crops such as horticulture have increased since 1998 in terms of acreage farmed, tree crops have decreased in acreage (AWM 2008). Vegetables and other vine crops increased in value since 1998, and livestock and poultry decreased in value since 1998 (AWM 2008: 2). Since 1998, both vegetable and fruit and nut crops have decreased in acreage (from 12,563 to 7,228 and from 44,855 to 43,624 respectively), while nursery and flower crops have increased in acreage from 8,337 to 10,670. Since 1998, both vegetable and fruit and nut crops have
increased slightly in value, however nursery and flower crops have increased dramatically from $722,186,252 to $1,042,703,756 (AWM 2008: 3).

For the past few years, San Diego agriculture has been stressed due to many reasons. The water that southern California has been so dependent on from the Colorado River has become less plentiful, due mainly to over pumping. The Colorado River water was needed for the increasing population in California, and also to support growing populations further up-river, such as in Las Vegas. The Quantitative Settlement Agreement in 2001 (Larson 2009), which revised allocation of Colorado River water, stated that California’s water would be reduced to its fixed allotment of water, therefore depriving it of any surplus water. This was a problem for the Interim Agricultural Water Program (IAWP) and Special Agricultural Water Rate (SAWR) discount surplus water programs, as both operated off of the pretenses
that there would be surplus water. (These programs are discussed further in Chapter 5.) To
supplement the needs of southern California’s growing population, an increase of water was
to come from northern California or the Sacramento Delta, thus increasing the price of water.
“On August 31, 2007, in a Sacramento court, a federal judge ruled that an endangered fish
(the Delta smelt) deserved a chance to survive extinction” (Bender n.d.). To allow the Delta
smelt its chance to avoid extinction, the water pumped from the Sacramento Delta to thirsty
southern California was drastically reduced. Coupling the reduction in water from the
Colorado River, a reduction in the water from the Sacramento Delta, and an ever-increasing
urban population eventually eliminated the surplus water that drove the IAWP and SAWR
programs, and provided for an environment where water prices rose dramatically (Bender

Much literature points to difficult times ahead for San Diego County farmers. Tree
crop farmers, especially avocado farmers, appear to be most susceptible to dramatic changes
in the future. These changes would be due mainly to lack of available water, high water
costs, and poor water quality. Avocados are known as water-intensive crops, meaning that
they require a lot of water as avocados are often grown on very large parcels of land.
“Average water use per acre is around 3.5 to 4.0 acre--foot/acre, with some growers having
to water more if they are in wind-prone locations” (Bender n.d.). As the current water
shortage is expected to create a dramatic change in tree crop, and especially avocado
production, strategies have been devised to help manage the current situation (Bender n.d.;
Fikes 2009; Larson 2009). Most strategies point toward taking out trees and capping
sprinklers for the following reasons: root rot infected trees, sunblotch infected trees, and trees
grown in wind-prone areas. Other suggestions for managing one’s business include: thinning
the grove, pruning trees, analyzing the grove regularly, scheduling irrigations properly, and
maintaining irrigation systems already in place (Bender n.d.). With such a bleak future
forecasted, one wonders how an avocado farmer will survive in the future. As many other
crops grown in San Diego County can typically be grown on smaller parcels of land,
therefore requiring less water for irrigation purposes, the predictions for the futures of other
crop types are not nearly so negative.
**METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA**

The Metropolitan Water District of Southern California (MWD) was formed in 1928, and served to better organize the water being transported to southern California from the Colorado River Aqueduct. Currently, MWD manages the importation of southern California’s water from two main sources, the Colorado River (73%), and the SWP (27%), which relies on snow melt from the Sierra Nevada Mountains in northern California (Metropolitan Water District 2004, San Diego County Water Authority [Water Authority] 2009). MWD is comprised of 27 member agencies which purchase water for their own purposes. The Water Authority (2009) is the largest member agency in terms of water purchases for the MWD. The Water Authority purchases about 30% of the MWD’s available water.

**SAN DIEGO COUNTY WATER AUTHORITY**

The San Diego County Water Authority (Water Authority) was formed in 1944 to support San Diego’s growing population during WWII. At that time, the Water Authority began purchasing water from MWD which flowed from the Colorado River through a 73-mile pipeline to needy customers in San Diego County. Currently, the Water Authority (2009) has two aqueducts with 274 miles of pipeline, which help support the water needs of 75-95% of the region. The Water Authority is comprised of 23 member agencies (representing more than 2.9 million people) which purchase water from the Water Authority for their own water needs. Member agencies are responsible for storing their own water, and as such there are 24 reservoirs run by member agencies within the boundaries of the Water Authority (2009). San Diego County farmers have the choice to voluntarily participate in discount water programs, such as the MWDs IAWP, and the Water Authority’s SAWR. Member agencies that participate in these programs include: Carlsbad Municipal Water District, the City of Escondido, the Fallbrook Public Utility District, the City of Oceanside, Olivenhain Municipal Water District, Otay Water District, Padre Dam Municipal Water District, the City of Poway, Rainbow Municipal Water District, Ramona Municipal Water District, Rincon Del Diablo Municipal Water District, the City of San Diego, San Dieguito Water District, Santa Fe Irrigation District, Vallecitos Water District, Valley Center
Municipal Water District, Vista Irrigation District, and Yuima Municipal Water District (Water Authority 2009).

**SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD**

The San Diego Regional Water Quality Control Board (Control Board) is one of nine control boards in the state of California. Each control board is divided by watersheds and other characteristics (i.e. geography, geology, climate, etc.), and is tasked with enforcing water quality standards and objectives for the specific watershed. The Control Board is responsible for maintaining the water quality standards required in San Diego County as well as preserving water bodies from point source and non-point source pollution outlined in the federal Clean Water Act.

**SAN DIEGO COUNTY FARM BUREAU**

The San Diego County Farm Bureau (SDCFB), established in 1914, is one of the oldest of 53 farm bureaus in the state of California. It is a non-profit organization funded by dues from its members, and is concerned with serving the agricultural community in San Diego County. As stated on the SDCFB’s website: “The mission of the Farm Bureau of San Diego County is to represent San Diego agriculture through public relations, education, and public policy advocacy in order to promote the economic viability of agriculture balanced with appropriate management of natural resources.” As an advocate for San Diego County agriculture and the farmers themselves, the SDCFB is able to serve as a commanding voice on the county level, and is also an important resource for many important, and current agricultural issues. Agricultural concerns are voiced by the California Farm Bureau Federation on the state level, and the American Farm Bureau Federation on the national level.

The SDCFB has developed the Irrigated Lands Group in order to ease the financial burden of reporting runoff from one’s property alone which can be quite difficult, complex, and costly (due to compliance fees). This is a group available to SDCFB members in the County, and essentially will conduct all the monitoring and reporting of discharged water off the agricultural land for a fee, estimated to be fractions of what it would cost if done by oneself. The Irrigated Lands Group was formed shortly after the Control Board adopted rules
in 2007 which required all agricultural operations to test runoff and report the results however currently it has not had a chance to perform yet.
CHAPTER 5

REGULATORY ENVIRONMENT PERTAINING TO WATER AND WATER DISCOUNT PROGRAMS

THE REGULATORY ENVIRONMENT FOR SAN DIEGO COUNTY AGRICULTURE

The regulatory environment particular to San Diego County farmers is complex and immense. Many of the laws that impact the lives of San Diego County farmers begin first on a federal level where they serve as an umbrella law for the purposes of water quality enforcement. Federal laws are then enforced on a state or local level. The State of California also has its own regulations pertinent to water quality that it enforces, and each member agency of the Water Authority may have its own method of enforcement or specific laws and regulations. The text that follows by no means details every law and regulation relating to agricultural water for San Diego County, but rather those which appeared most relevant to San Diego County farmers.

FEDERAL LAW: CLEAN WATER ACT

The Clean Water Act, was set in place to regulate the amount of pollutants that are discharged into the environment, either directly (point source) or indirectly (non-point source). Sections of this federal law control the discharge of point source pollutants into the nation’s waters. Currently, any facility (including agricultural facility) must obtain a permit if they intend to discharge into the environment. The permit requires one to quantitatively regulate the amount and type of pollutants that the facility may then discharge.

In 1987, the Clean Water Act was amended to address storm water discharge. Storm water discharge is associated with industrial activity and means “the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant” (U.S. Environmental Protection Agency [EPA] 2009). Therefore, any facility that discharges water used for industrial purposes, or water that is considered to be a danger to water quality
standards, or a pollutant to waters is required to apply for a National Pollutant Discharge Elimination System permit. Many facilities, and some farms, that are in need of applying for a permit for storm water reasons may also need to undertake engineering projects (e.g. retention ponds) to meet standards set by the Clean Water Act. For the purposes of the Clean Water Act, a farm is considered “a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, $1,000 or more of agricultural products during a year” (EPA 2009). Farms that are deemed to have a heavy load of pollutants run off their property are required to adhere to Oil Spill Prevention, Control, and Countermeasures Program (SPCC). Currently, the SPCC requires that a farm not exempt from SPCC rule must implement and adhere to SPCC rules, which include the building of structures, to begin no later than November 10, 2010.

Most San Diego County farmers fall under the nonpoint source pollution section of the Clean Water Act. Nonpoint source water is any water that does not have a direct source of pollution, like many industrial facilities may have. Nonpoint source pollution can be caused by rainfall or snowmelt and is when runoff water moves off one’s property and carries with it natural and human-made pollutants which may then run into United States waters. Such pollutants include fertilizers, pesticides, herbicides, and insecticides running off agricultural lands or from residential areas. According to the Clean Water Act, salt is considered a nonpoint source pollutant, as are bacteria and other nutrients from livestock and other pets. Nonpoint source pollution also includes oil, grease, and other chemicals that run off urban areas. Agricultural producers are prompted to use a variety of “best management practices” which would essentially reduce, partially or wholly, the existence of nonpoint source pollutants. Nonpoint source pollution is monitored as often as possible in every watershed.

Currently, nonpoint source pollution is controlled by monitoring total maximum daily load (TMDL), which is determined on a state by state basis and indicates the amount of nonpoint source pollution that may run off into a particular watershed, and still allow it to remain as nonpolluted water. The purposes of establishing and regulating a TMDL for a given watershed area is to identify what needs to be reduced from agricultural producers, as well as other sources of nonpoint source pollution (EPA 2009). Currently, there exist no
published studies on the possible nonpoint source pollution running off of urban areas. Currently, these regulations are in effect to monitor mainly larger facilities, sometimes including farms. In other words, some larger family farms find themselves to be held to higher standards than neighboring urban land of the same size in acres, and held to the same standards as some larger factory type facilities. 303(d) lists are also prepared in conjunction with the TMDLs. Each state is responsible for preparing its own 303(d) list, which quantitatively monitors the state’s major waterbodies and sets forth the amount of each pollutant that is allowable to still meet the requirement standards of high water quality in regards to the TMDLs.

**STORMWATER PERMITS**

Stormwater permits are based on the federal law of the Clean Water Act, and are carried out on a state level by the Regional Water Quality Control Board. As stated above, each state is required to monitor the TMDLs through the use of 303(d) lists, which quantify the amount of pollutants that is acceptable in waterbodies, while still allowing those waterbodies to be considered of high water quality. Stormwater permits, enforced on the state level, include the monitoring of areas deemed possible sources of point/nonpoint source pollution. The Regional Water Quality Control Board requires facilities (including agricultural facilities) to meet the requirements enforced through the stormwater permits. To comply with the stormwater permits, there are a variety of best management practices (BMP) that can be implemented to reduce the amount of pollutants running off one’s property and into waterbodies. There are BMPs that are specific to agricultural types (AWM 2008).

**INTERIM AGRICULTURAL WATER PROGRAM**

The IAWP was born out of the “Interruptible Program” which began in 1981. After a drought year in 1992, the MWD converted the “Interruptible Program” into the IAWP in May of 1994. Essentially, IAWP functions as a discounted water program for MWD supplied surplus water used for agricultural purposes. The amount of discounted water supplied by the MWD to its member agencies, including the Water Authority, has been determined “based on the agency’s average annual agricultural water use for the four-year period preceding the program’s 1994 implementation” (Metropolitan Water District of Southern California [MWD] 2008: 2), which is 100,459 acre-feet per year. In order to ensure that this discount
remains, each member agency must supply MWD with the information of the amount of agricultural water used in their area on a monthly basis. MWD is allowed to discontinue this discounted water supply (in part or wholly) as long as a one-year written notice is provided.

To ensure that proper participation is met by the MWD’s IAWP, a fee and penalty system is in place. Should a member agency exceed the allotted amount of water usage for a six-month period, a fee that is “twice Metropolitan’s applicable Tier 2 water rate” (MWD 2008: 7) will be incurred. Also, the maximum amount of IAWP water that a member agency can purchase will be permanently decreased by the exceeding amount.

On January 1, 2008, MWD reduced its member agencies’ supply of discounted water for the IAWP for the first time by 30 percent. As dry years continue to plague southern California, the IAWP has begun its five-year phase out plan, which will be carried out from 2008 to 2013. Through this phase out plan, the discounts received will be gradually lowered over time, and the baseline allotment will be adjusted to reflect each member agency’s ability to purchase water from the MWD. “Opting out of the program will remove a participant’s obligation for further IAWP reductions, effective January 1st of the following calendar year. IAWP reduction requirements will continue to be enforced through the end of the calendar year in which the opt-out notification is received” (MWD 2008).

**Special Agricultural Water Rate Program**

The Water Authority began the SAWR in 1998 as an additional discount program or water rate system that would be available to agricultural water users already participating in the IAWP. In January 1999, the SAWR provided agricultural growers with a discount of $5 per acre foot from the regular rate, which was $85 per acre-foot (Water Authority 1999: 3). The purpose of the SAWR was to provide agricultural water users with a discounted water rate while still requiring them to pay all regular operating costs, minus the cost of funding the Emergency Storage Project ($5 per acre foot in 1999). In exchange for voluntarily taking the SAWR discount, participants may have their water supply reduced during an emergency water shortage at double the water shortage amount. In this way, if the Water Authority reduced water county-wide by 30%, SAWR participants would be reduced by 60%, which could be continued up to a maximum reduction of 90%. As the Water Authority is a member agency of the MWD, the MWD’s water rate and discounted water
rates are passed on to the Water Authority and then on to the customer. In this case, the SAWR discounted water is also passed on to the customer, therefore allowing the participant in both programs a discount on top of a discount.

Should a water emergency occur, the Water Authority’s board of directors would determine how long said emergency should last, how agricultural water supplies would be affected, and what the level of reduction would ultimately be. If a member agency of the Water Authority does exceed the amount of allocated discount water available, the Water Authority board of directors will be summoned to determine the consequences and any actions that may be taken. In the event of an emergency, participants are not allowed to opt out of the SAWR. If the IAWP is discounted, as it is being phased out between 2008 and 2013, the Water Authority “would establish its own program setting the criteria for participation in the Special Agricultural Rate. These criteria would be similar to those contained in the IAWP” (Water Authority 1999: 6).
CHAPTER 6

FARMERS PERSPECTIVES ON WATER AND REGULATIONS

San Diego County agriculture is comprised of a wide array of crop types, and growers of each crop type may perceive the available water and regulations differently. Therefore, when selecting a sample population for this study, it was important to include at least one farmer from every major crop type group and to focus on how each crop type group perceived their source of water and the regulations pertaining to that water. It was also important to summarize how agricultural water and regulations as a whole in San Diego County are understood. This entailed analyzing the content of all interviews for common elements concerning water, regulations, frustrations and concerns of San Diego County’s “every farmer.”

San Diego County farmers are hardy, just like many of the crops they grow. They have seized the opportunity of having great access to market places, near perfect climate, and diverse geographical aspects (i.e. valleys and hillsides) which have all combined to make San Diego one of the most diverse agricultural counties in the country. Water in southern California and in San Diego County has undergone many changes and stressors since the Spanish settled in 1769. In agriculture’s infancy in San Diego County, there was not the same stress placed on water conservation and responsible water use and irrigation since water availability was not as big an issue as it has been recently. Currently, access to water, its cost, and its quality are important to all farmers, but vary depending on crop type farmed. Therefore, it is important to first state the perception of water and regulations by crop type, as the type of crop being farmed determined to some extent a farmer’s preoccupation with water quantity, quality, salinity, water runoff issues and various irrigation methods. Farmers are concerned with different aspects of the materiality of water (Orlove and Caton 2010) according to the different uses they make of it in their cropping system.
WATER AND CROPS

The farmers who operate the largest areas of land and therefore usually use the most water (typically tree crop farmers) are understandably most concerned with water availability and the current and impending water scarcity. However, they are not the only ones to view water availability as tantamount. With the crop type that has seen the most financial gain in terms of agricultural products produced in the recent past, nursery and flower crop farmers also voiced their concern for water scarcity and having financially available water to continue to allow their farming businesses to thrive. The quality of the water available for agricultural purposes is also a prime concern to many tree crop, vegetable and vine, and mixed crop farmers. This is an obvious concern, as many crops grown, such as avocados, are sensitive to high salinity levels in water. Tree crop farmers sometimes supplement their water supply by using well water to reduce costs. Farmers stated that well water generally tends to have a high salinity level which can be detrimental to some crops, though the level of salinity varies depending on the location of the well. Other farmers, depending on the crop type, do not regard water quality as such a big issue. For example, one dairy farmer mentioned the salts in his well water as a positive factor, as cows require a particular mineral package to remain healthy. The salts in the well water apparently supplement part of their mineral package.

We’ve sampled our water, we know the salinity of it, so consequently cows do need a certain level of salt in their diet to maintain their natural positive and negative ions of electrolytes and because we know that there’s salt in the water, we’ve lowered the normal amount of salt that would be in the mineral package and realized that will be compensated for by what’s in the water irrigation methods also vary by crop type. For instance, the irrigation methods of a nursery and flower crop farmer (i.e. drip irrigation and water by hand) differed from the irrigation methods of a tree crop farmer (i.e. micro-sprinklers).

Efficiency when dealing with natural resources was ever on the minds of San Diego County farmers. As water scarcity is no longer only in the forecast for the future, but is indeed already a reality, most farmers have taken great strides to become the most efficient water users they can be. Becoming an efficient water user entails investing in the most current and appropriate irrigation technology, and monitoring all irrigation sites either by hand or by computer. Tree crop farmers expressed the greatest sense of perceived efficiency in terms of the natural resource, water, which may certainly be due to the fact that most
operate large parcels of land, therefore requiring large amounts of water to produce their agricultural product(s). As water typically accounts for a significant portion of farmers total operating costs, it is logical to be as efficient as possible with this natural resource, especially concerning those who operate larger farms (i.e. tree crop farmers).

Along with an expressed feeling of efficiency concerning water use, some farmers also expressed a perceived sense of resiliency in times of struggle (i.e. less available water, poor water quality). Mixed crop farmers expressed this sense of resiliency more frequently than other crop type farmers. Diversifying the crop types farmed was sometimes mentioned during interviews by farmers as a way to stay productive and marketable. Out of all other crop type groups, mixed crop farmers stand to be the most diverse in terms of agricultural products produced, as they generally produced many different kinds of crops versus specializing on one specific crop. Therefore, it comes as no surprise that mixed crop farmers find themselves to be resilient farmers.

Farmers do whatever they can to try to stay in the business to keep farming…be them a dairy farm or a fruit and vegetable farm, ya know, they buy the land, they take care of the land, they don’t plan on selling the land, they plan on dying on the land and their kids dying on the land, and farming it over and over again…

I think we’ll do good. We do have the perfect climate for it, and that makes it very attractive. Gotta figure out how to get over the hurdles. Farmers are resilient people.

While San Diego County farmers may sometimes feel like efficient water users and resilient during times of struggle, there were also concerns mentioned about the future, indicating a worry for their livelihood and a worry the farming tradition may not be passed to subsequent generations. Of all crop type farmers interviewed, tree crop and vegetable and vine crop farmers made a point to voice their concerns for the future, and as such appeared less secure than other farmers in terms of the future of their business. Tree crop farmers, especially those producing avocados, have been focused on recently in news articles highlighting the adversities faced (i.e. current water scarcity, cutbacks, poor water quality).

In conclusion, it was found that water availability and the quality (especially the salinity level) of the available water is important to most farmers, especially tree crop farmers. Most try to be as efficient as possible with their agricultural water source and as such, feel that they may be resilient in the face of struggles. As concerns about water are ever on the minds of most San Diego County farmers, it comes as no surprise that some are also
concerned about future family generations being able to carry on the farming tradition and livelihood.

REGULATIONS

Regulations, when viewed on the federal level, are supposed to be applicable to all large water users in the same manner. In other words, all large water users, in this case all San Diego County farmers, are supposed to be held to the same standards in terms of water use, water runoff, and the like. However, when discussing regulations and the regulatory environment with San Diego County farmers, it became very clear that not all farmers perceived regulations in the same way, and not all farmers reported being affected in the same way.

Regulations, especially those relating to stormwater runoff, were often perceived by the farmers interviewed as being applied excessively and ultimately having a negative impact on their farms. Nursery and flower crop and mixed crop farmers voiced the most concerns about regulations having a negative effect on their farming business. Others, such as livestock farmers and mixed crop farmers felt that some regulations were a bit excessive. Both perceptions (i.e. negative and excessive) may be due to the type of crop being farmed. Nursery and flower crop farmers often grow plants in containers, as opposed to directly in the ground. When irrigating the potted plants, some water may fall to the ground, which is often not dirt, but some impenetrable surface, thus causing runoff. For this reason, it comes as no surprise that nursery and tree crop farmers mentioned runoff issues as a cause of concern with the most frequency compared with other crop types.

While regulations were at times viewed as being applied excessively and therefore negatively affecting their farm, farmers also spoke of their perception that regulations may sometimes be applied unequally. Livestock farmers, more than others, voiced a concern during the interviews that some regulations may not be applied equally as they are intended, but are applied on what was described by one livestock farmer as on a “complaint by complaint basis.” One livestock farmer expressed the concern that their neighbors may complain about the runoff and the smell of some operations. This livestock farmer believed that regulations can be enforced unequally when a farmer is complained about enough times. Complaints made about farmers and their farms may have increased in recent years as San
Diego County is becoming increasingly urban, therefore allowing for closer living quarters between farmers and urban peoples. Also of interest is the fact that while only some nursery and flower crop and mixed crop farmers were required to build structures to comply with current regulations, all livestock farmers were required to do so. Requiring the livestock farmers to build structures such as holding ponds for runoff, and canals for water flowing off or through their property may contribute to their voiced concern of excessive regulation, and that some regulations appear to be applied and enforced unequally.

Politics were often mentioned as a catch-all phrase referring to the power struggle between those non-farmers making and enforcing regulations, and the farmers who must abide by them. The term, “politics,” was used in reference to a seeming disconnect between enforcers of regulations and those the regulations are enforced on (i.e. farmers). In other words, the use of the term “politics” related to a power game in which the farmers were engaged. Mixed crop, vegetable and vine crop, and livestock farmers voiced their frustrations the most during interviews.

The previously stated frustrations and perceptions of regulations have created a sense of worry for the future for some farmers. In general, the expressed sense of worry for the future seemed to stem from less water availability, increasing strictness of regulations, and increased financial intensity due to compliance fees, and water rate increases. This sense of worry was generally expressed as a concern for the future viability of their farming business, and also a worry that they may be the last generation to carry on the tradition of family farming.

The economics/finances of it (agriculture) will drive us out of business…

We have a lot of friends in the industry that their kids said thanks, but no thanks, we’re gonna go do something else, and ya know, that’s happening more often these days…

Concern with water and water regulations reflect both the connectivity and materiality of water (Orlove and Caton 2010). Farmers understand that their use of water as an essential resource connects them in multidimensional ways to wider communities of water users and to the complex system of water governance described in Chapters 4 and 5. The materiality of water, its various physical characteristics, means that farmers of different crop types relate to water governance in different ways, depending, for example, on whether the
flow of water or the quality of water is most important in terms of the regulations that apply to them.

Regardless of regulations being in effect, six of the San Diego County farmers interviewed believed that they would maintain their land and water sources even without existing regulations. Land was to be maintained as farmers often intended to pass their farming business and farming as a livelihood on to the next generation.

In conclusion, it was found that many farmers found water-related regulations to have a negative impact and felt they may be applied excessively. Some farmers, especially livestock farmers, felt regulations to be applied unequally and on a “complaint by complaint” basis. Regulations and the fees associated with complying with regulations have caused worry for the livelihood of future farming generations. While there was an expressed worry or concern for the future, many believed they would maintain their water sources regardless of regulations being in place.
CHAPTER 7

SAN DIEGO COUNTY FARMERS’ SENSE OF IDENTITY

An analysis of the interviews makes it possible to better understand San Diego County farmers’ sense of belonging to a particular group. To understand this I focused on how the San Diego farmers interviewed perceived themselves as different from other groups, and also the expressed similarities within the San Diego County farmer collective group. The farmers interviewed were found to primarily identify with the larger collective of San Diego County farmers rather than by the specific crop type they cultivated. The differences and distinctions found in transcripts between farmers of varying crop types were found to be for practical reasons that defined and distinguished their daily farming routine, but did not alter the larger collective identity they appeared to associate with. The distinctions made during the interviews between farmers and non-farmers also illustrated that San Diego County farmers most strongly identified as a group. They identified with the livelihood of farming rather than the grower of a particular type of crop or user of a particular water regime.

The San Diego County farmers interviewed would often compare their farming profession with non-farming professions (i.e. doctor, lawyer, engineer, etc.) especially when giving examples to emphasize a point. This comparison between farmers and non-farmers was done in such a way that also emphasized farmers as a group.

One dimension in which San Diego County farmers distinguished themselves from non-farmers was competition. Those interviewed explained that most other non-farming professions experienced competition amongst themselves. By this it was implied that doctors, lawyers, and engineers (to name a few non-farming professions) most likely competed with other doctors, lawyers, and engineers to become the most valuable or for more pay. Those interviewed explained that there was little competition to out-produce or out-sell their fellow farmers of the same crop type. It was explained that as “price takers” it benefitted them all if they worked together as opposed to working against each other. Being a “price-taker,” or susceptible to changes in the market, both separated farmers from other professions, and
united farmers regardless of crop type. To that end, it was described that farmers of similar crop types would often support and help other farmers with some issues (i.e. which pesticides worked best, what type of irrigation to use, farming techniques which worked the best, etc.). The San Diego County farmers interviewed shared a feeling that their sense of non-competitiveness was intrinsically different than other non-farming occupations. It was thought that with other non-farming occupations, workers often competed against each other to become the most valuable employee or produce the most valuable product, instead of working together for the common good as the interviewed farmers believed they did. This sense of working together for the common good instead of competing with other farmers may have also played into the overall group identity of San Diego County farmers.

The San Diego County farmers interviewed also explained that there was a distinct difference between themselves and what they termed gentlemen/suburban farmers. Gentlemen/Suburban farmers were considered those people who have a main source of income which is not farming (i.e. banker, doctor, lawyer, engineer, etc.), and who enjoy farming more as a pastime than as a livelihood. Usually the gentlemen/suburban farmer operates their farm on a small acreage of land (i.e. about nine acres), compared to that of the San Diego County farmers interviewed (i.e. 25 acres to 600 acres). Sometimes, gentlemen/suburban farmers were discussed as “not real” farmers in comparison to the San Diego County farmers interviewed. This interesting distinction made between “real” and “not real” farmers in San Diego County also helps to better highlight the boundaries of the collective identity of San Diego County farmers. Those interviewed regarded farming as a family tradition that has been passed down over generations and carried on as a distinct way of life. It was explained that gentlemen/suburban farmers do not normally share these characteristics and in this way are fundamentally different from the farmers interviewed.

They (gentlemen/suburban farmers) come on the weekends and they come farm, they don’t really have the science…

They (gentlemen/suburban farmers) don’t know anything, that’s why they hired me (as a grove manager), they don’t know how to farm…they aren’t farmers, they’re owners.

They (gentlemen/suburban farmer) are people that generally farming is a second income for them…a lot of people that are either professionals, doctors, lawyers, people like that, or retired people…
Besides a focus on the differences between farmers and non-farmers, it is also helpful to focus on the shared aspects between members of a group. Looking at similar aspects can also provide a better grasp on San Diego County farmers’ sense of collective identity. When conducting interviews with San Diego County farmers, most introduced or referenced themselves as a “farmer” or a “San Diego County farmer,” versus by their particular crop type farmed.

I’ve been a farmer for, well, pretty much all my life.

I’m a little more sensitive to animals and birds and things that happen on a day to day basis with weather because I’m a farmer.

I’ve been a farmer my whole life.

The San Diego County farmers interviewed commented often that they felt themselves to be part of a close knit community of farmers. They mentioned this sense of closeness, even though they may not be so close geographically. Some of the farmers interviewed, or their family members, were quite close with other San Diego County farmers regardless of the type of crop farmed. It was also noted that most farmers interviewed were members of the SDCFB, which acts as non-profit organization made up of and for the farmers in San Diego County. In this way it is also possible to understand the SDCFB as contributing institutionally to the collective identity of San Diego County farmers. As farmers belonging to a community, a number of concerns, interests, and views were voiced during interviews that appeared cohesive among those interviewed. The fact that the sampling frame for this study was saturated, that is the referrals from interviewees came to be repeated, suggests that the interviewees are at least part of a network, if not a community.

Many interviewees expressed a similar love of the outdoors, a desire to work with their hands, and a fondness of watching things grow. Also shared among those interviewed was a sense that the farming way of life or farming as a livelihood, was one that promoted positive family values. This was evident from the fact that many farmers were second, third, or even fourth generation farmers, and also was evident from the language used to describe their fondness for farming.

Instead of being in a board room around a table, we can hear the birds chirping, and we can look around and see the clouds and the moon and when you stop and take those into consideration it’s a pleasant place to work…it’s an honest living.

I think it’s a great way of life, it’s a great place to raise a family.
It’s been a really good lifestyle in which to grow up in, it’s a great way to raise our kids.

I believe when you talk to people in agriculture that they are more passionate about their profession than if you talk to an attorney or an engineer…

Everybody in this farming community – it’s just a very unique community, its so easy to deal with and be with…its something hopefully that I might be able to pass on to my kids…”

I love being a farmer!

About six of the San Diego County farmers interviewed explained that they felt they were the “true environmentalists” and believed that they would maintain their land and their water sources even without the enforcement of current regulations. About 11 farmers interviewed explained they intended to pass their farm down to the next generation of their family, and also intended to stay productive farmers and maintain their sense of livelihood as long as possible. They explained to me that their care for the land was very important. This meant that they paid close attention to water running off their property so as not to promote erosion, not pollute their soil with unnecessary fertilizer and/or pesticides, and not allow the land to be filled with as much permeable landscape as possible (i.e. keeping paved roads and roofs to a minimum), so as to limit the amount of runoff from their property and to maximize the amount of water kept in the soil. Farmers’ sentiments expressed during the interviews echo the work done by Paolisso and Maloney as they also describe the farmer as viewing him/herself as an environmentalist. “Farmers believe they are the ‘real’ environmentalists because they live with nature every day and depend on it to make a living…Farmer environmentalism…promotes the use and maintenance of natural resources in a manner that ensures productive capabilities for future generations” (Paolisso and Maloney 2000: 214, 215).

The connection San Diego County farmers feel to their land and their production of crops and livestock relate them to broader discussions of food production as discussed by Pollan 2006 (2006). The San Diego County farmers interviewed did not present themselves as prepared to exploit their land and water resources for the maximum profit in the shortest period of time. Rather, they saw themselves as part of a less competitive community that had a direct family relationship to the long-term health of their land. These are the kinds of sentiments that Gibson-Graham (2006) call for in the construction of a community economy.
Farmers are the best kind of environmentalist around, because we depend on the environment
to feed ourselves, to earn money from, so we’re not going to poison our environment.

I think it’s very safe to say that in agriculture we often feel that we’re the true
environmentalists and then when you come back to a family farm, my father
obviously had to leave it in a certain condition for myself and I recognize that if I
want to leave anything along for the next generation I need to do the same.

I’ve started farming here and none of these homes were here, and they’ve all
come around me in the past 20 years, and they’re my clients, my neighbors,
you’re my friends, and I need to be responsible as a farmer not to put anything
down the drain that would influence their life, but is the reciprocating true?

While there were many positive aspects shared pertaining to farming as a livelihood,
there were negative points that were also shared among those interviewed. Many farmers,
regardless of crop type farmed, remarked upon the financial intensity of farming, a sense of
excessive regulations, a worry for the future, and a negative feeling toward “politics” in
general. Politics were often mentioned as a catch-all phrase referring to the power struggle
between those non-farmers making and enforcing regulations, and the farmers who must
abide by them. Often times, farmers commented that complying with some regulations
contributed to the financial intensity of farming. In general, the expressed sense of worry for
the future seemed to stem from less water availability, increasing strictness of regulations,
and increased financial intensity. This sense of worry was generally expressed as a worry for
the future viability of their farming business, and also a worry that they may be the last
generation to carry on the tradition of farming as a livelihood.

I think if the water rates go up much more I think you’re gonna see a lot of groves
going out of business.

I’d sure like to keep it going, and if our government would help us out as in
getting us cost efficient water, the farmer would stay farming, but what do we tell
our kids to do? It’s such a challenge out there, you know, they say it’s not worth
it, they don’t want the headache, they’re running away.

In conclusion, it was found that farmers felt strongly about belonging to a close knit
community that differed distinctly from others. San Diego County farmers differed from
other non-farming professions (i.e. doctor, lawyer, engineer, etc.), especially in a perceived
sense of competitiveness. San Diego County farmers felt they worked with their community
of farmers for the greater good more than other professional groups. They also felt they
differed collectively from those they called gentlemen farmers, as farming to San Diego
County farmers was considered their primary income, which is not the case for gentlemen
farmers. Many of the San Diego County farmers interviewed shared a sense of being the “true environmentalists.” As environmentalists, they felt a responsibility for the well-being of their land and their ability to pass it on to the next generation. Those interviewed felt part of a close knit community which shared common likes and dislikes, as well as the institutional connection of the SDCFB.
CHAPTER 8

CONCLUSIONS, LIMITATIONS, FUTURE RESEARCH

Conclusions

This study found that San Diego County farmers had specific perspectives on agricultural water and regulations. Farmers’ perspectives on these topics were generally similar (i.e. need for available water, feeling that regulations had a generally negative impact on their farm). Differences from the general trends of perspectives tended to occur due to the practicalities of farming various crop types. This study also found that San Diego County farmers tended to identify as belonging to a collective group and presented themselves as inherently different from other professional groups (e.g. doctors, lawyers, engineers), as well as what they called gentlemen/suburban farmers.

Agriculture in San Diego County is very important economically. Many farmers have carried on the livelihood of farming for multiple generations and truly enjoy the work and associated lifestyle. Surveys, seminars, focus groups, and listening sessions have previously been done with San Diego County farmers; however in-person interviews add a new dimension to existing research on San Diego County farmers and agriculture. The research for this thesis has focused on San Diego County farmers’ perspectives on water and regulations and issues of identity, specifically collective identity. An analysis of these data can give academics, policy makers, those creating and enforcing regulations, farmers, and the general public more insight into a group which they might not already be a part of. The perspectives of the farmers in this research are also of interest in the context of the movements for locally grown food and small-scale farming, as many of the interviewees for this study have locally-based enterprises and in many cases multigenerational family farms, as opposed to large corporations operating in different locations.

In Chapter 7, the characteristics shared among San Diego County farmers were discussed. These characteristics may factor into their ability to sustain the farming business and tradition. In many cases, the farming tradition has been passed down over generations
and is expected to continue into the future. In order to ensure that the family farming business is continued, farmers take special notice to the care of their land and their water resources. Many of those interviewed considered themselves to be the “true environmentalists,” and as such believed themselves to use their natural resources in only the most caring and efficient ways. Many farmers interviewed explained their shared love of the outdoors, growing, and belonging to a closely knit community; one which is perpetuated institutionally by the SDCFB. San Diego County farmers shared a sense of non-competitiveness among themselves which is quite different than with other professions. Many of those interviewed explained their helping other farmers of similar crop types instead of competing to become the sole producer or best producer of a given product. By working together, instead of against one another, San Diego County farmers are better able to perpetuate the farming tradition and ensure future generations may have farming as a viable option. The many shared characteristics among San Diego County farmers supports the idea that those interviewed think of farming as a way of life, or livelihood, as opposed to simply as a “job.”

As discussed earlier, Gibson-Graham write about community economies, or the possibilities for environmentally sustainable production within local communities, which share a core set of characteristics. Gibson-Graham (2006: 87) describe a community economy as place-attached rather than a-spatial/global, small-scale rather than large-scale, cooperative rather than competitive, socially embedded rather than socially disembedded, with local rather than nonlocal ownership. A community economy values long-term investments rather than privileging short-term return, it is locally self-reliant rather than participating in a spatial division of labor, and it is environmentally sustainable rather than unsustainable. Many of the characteristics used to describe community economy strongly relate to the characteristics shared among San Diego County farmers.

This view on community economy echoes Pollan 2006’s views on local sustainability. “Shopping locally underwrites a whole set of other values (on the farm). That’s because farms produce a lot more than food; they also produce a kind of landscape and a kind of community” (Pollan 2006: 258). In _The Omnivore’s Dilemma_, Pollan 2006 presents supporting local farmers as a way to promote agricultural sustainability, as well as the local family farmer and their values. In this aspect, we can see how
Gibson-Graham and Pollan agree on the issue of local sustainability resulting from a community economy and how this relates to San Diego County farmers. San Diego County farmers tend “to meet local needs” while “recognizing and building on the diversity of practices that support and sustain livelihoods” (Gibson-Graham 2006: 193). Furthermore, they acknowledge “the interdependence of individuals, groups, nature, things, traditions, and knowledges” (Gibson-Graham 2006: 193). In this sense they participant in an incipient community economy and constitute at least partially “cultivated subjects” (Gibson-Graham 2006: 127 ff.); that is individuals who have an awareness that their approach to production is distinct from a purely capitalist economy.

The approaches of Gibson-Graham in envisioning a new kind of economy and of Pollan in envisioning a new kind of agricultural production relate to the major themes and anthropological concerns regarding water governance discussed in Chapter 2. These are the emerging global theme of water as a human right instead of (or in addition to) water as a commodity; the relationship between local people and distant institutions seeking control over local water use; and the differences between local and bureaucratic understandings of water. All water users in San Diego County understand water as a commodity. Even though the language of water as a right is not heard much in the United States, San Diego farmers also understand that their livelihood depends on reliable and affordable access to water. Therefore, water is viewed as more than just a commodity. For the famers interviewed, water is not just a factor in a profit-making enterprise, but is the resource that makes their way of life possible. Many San Diego farmers see water as connected to their farming business as an essential part of their livelihood which they aspire to hand down to their children.

Consequently the agendas of local water users and the federal and state agencies that sell and regulate water are not always the same. Even though the farmers interviewed were not necessarily part of the organic movement, they still viewed themselves as local water users with long-term interests in conserving local resources. Those interviewed were not part of corporations working in multiple locations or employees of large corporations. In this way they provide a link between a past based on the family farm and the kind of agricultural production situated in communities that Gibson-Graham and Pollan are calling for.

As we saw from Scoones (1998: 3), taking into account the policy context and politics is essential for understanding farmers’ strategies for sustainability. Ironically, the
importation of water from outside of the region is one of the greatest impediments to sustainable development in San Diego County. This means, however, that the careful use of imported water is even more urgent than other measures towards sustainability. The concern for the stewardship of water is clear in both the regulations about its use and the perspectives of San Diego farmers. The interviews show that San Diego farmers struggle to balance meeting the regulations and paying for water as an increasingly expensive commodity with their desire to preserve the small and often family-owned farm as a livelihood.

Water regulations and policies have been put into effect to manage our water supply and ensure that water is available to those who need it. Programs such as the IAWP and the SAWR have been put into effect in the recent past in order to supply farmers with a reliable and affordable source of water. However, many of the San Diego County farmers interviewed explained that regardless of the special water programs, water regulations and less water availability are having a negative effect on the farming business and tradition. Among the themes discussed in this study is the idea of a disconnect between water users and water regulators, or what was sometimes referred to negatively as “politics”. This can also be understood in terms of conflicts between centralized bureaucratic control and local control, and differences between bureaucratic knowledge and local knowledge of water as a resource and water use.

The organization of power and interests at the regional and community levels is a critical variable that influences how state policy is interpreted and enacted at the local level...In areas where the state is expanding its power and role in the countryside, there is often an inherent conflict between the pressures for centralization and the desire by many local residents to retain autonomy. (Enge and Whitehead 1989: 184-185)

Water governance in San Diego County is characterized by both the “tributary” and market systems, to use Donahue and Johnston’s (1998: 340-341) terms, with the imposition of both complex regulations and high prices. These regulations reflect the “connectivity” and “materiality” of water (Orlove and Caton 2010: 402-404) in that they relate San Diego farmers to numerous bureaucracies that deal with the qualities of water, from its scarcity to its chemical content to the effects of its movement through runoff. The negative feelings shared among some San Diego County farmers due to less water availability, regulations, or what they termed “politics” has led to a shared sense of worry concerning their ability to pass the farming business and tradition to the next generation. While a sense of worry for the
future was shared among those interviewed, San Diego County farmers also strongly believed themselves to be resilient in times of struggle and especially efficient with their natural resources. As such they remain relentlessly optimistic about the future of their farm, their family, and farming in San Diego County.

The qualitative research performed for this study has shown a new light on the community of San Diego County farmers. This study will prove useful to many organizations (i.e. Control Board, Water Authority, MWD, SDCFB, etc.), as it provides a deeper understanding of the community of San Diego County farmers. Such information is important to be mindful of when creating or altering regulations, or water rates or supply, as a drastic change made without considering the San Diego County farming community could result in a possible loss of millions of dollars to the County, and possibly the state, as agriculture ranks fifth in terms of economic impacts to San Diego County (American Farmland Trust n.d.: 5). While this research did address the questions of how San Diego County farmers perceive water and water regulation, and identify with their livelihood, it also opened the door to many more research questions which could also be explored through additional qualitative research. It is my hope that such additional research can be performed with this community. It was my sincere pleasure to perform this research, and especially to meet and converse with these genuinely happy and hard-working people

LIMITATIONS

This thesis study had some limitations. Possibly the most obvious of these limitations is generalization. A total of 16 interviews were conducted with a total of 19 San Diego County farmers. This sample population is by no means close to the number of actual farmers present in San Diego County. Furthermore, the percentages of interviewees farming different crop types is not representative of the percentages of San Diego County farmers, nor was it intended to be so. Interviewing every San Diego County farmer would have been a poor use of time, and also near impossible. The sample population used for this thesis study was biased (in terms of numbers) toward tree crop farmers. As tree crops are receiving the most reports in the news as being endangered by the current and impending water scarcity and strict regulations, I concluded that allowing for more interviews with tree crop farmers was
necessary. Due to these circumstances, it would be difficult to generalize these results and conclusions and use them as a template for the larger, actual population.

It was a limitation that the interview session itself was the first time I was meeting some of the interviewees and therefore they may not have shared information as freely as I had hoped. There was also a worry that some interviewees may have skewed their answers to some questions so as to please the interviewer.

During the interviews an interview guideline was used, which was followed as much as possible, however at times some questions were skipped, either accidently or on purpose, or other issues were probed further. Therefore, there is no guarantee that every interview session was exactly the same, which would allow for differences to arise when analyzing that may not be due to the farmers themselves, but due to the interview questions asked, and furthermore the way they were asked.

Finally, the interview location was not similar for every interview. Each interview was attempted to be held on the farmer’s farm under the assumption that they would feel more comfortable and at ease in this location and more willing to share information. However, this was not the case for every interview, and therefore this may account for some interviewees’ apparent lack of willingness to share information or elaborate on particular issues.

**POSSIBLE FUTURE PROJECTS USING THIS RESEARCH**

In the future, there are several research options which could be undertaken to further the results concluded from this thesis study. This study could be broadened by looking deeper into the wants, needs, and perspectives of organizations responsible for enforcing regulations. To gain this deeper understanding of the perspective(s) of such organizations, additional interviews with agencies in charge of enforcing regulations would need to be conducted using a different interview guideline.

This study could also be used as one half of a comparison study, in which domestic water users would be interviewed using a similar interview guideline. This type of study would ensure a better understanding of the differences and similarities between the two primary groups of water users. Such research would be interesting and useful to those responsible for creating and enforcing current and future regulations. This might also prove
insightful in terms of how the two groups of primary water users may be affected and adapt in times of increasing water scarcity, which is currently a reality in southern California.

Also, this type of study could be repeated in other areas of the United States, which also operate under the federal Clean Water Act, but are enforced under different state laws. Such research would be able to point out differences and similarities between agriculture in varying parts of the United States, as well as possibly show insight into how farmers of other crop types understand themselves and their farming operation, as not all crop types were represented in this study.

Finally, this study could also be significantly broadened by interviewing a much larger sample population. This option for future study would serve to confirm or disconfirm the results of this study, and may also allow the results found to reach a larger audience.
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APPENDIX A

LIST ACRONYMS
Best Management Practices (BPMs)
County of San Diego Department of Agriculture, Weights and Measures (AWM)
Interim Agricultural Water Program (IAWP)
Metropolitan Water District of Southern California (MWD)
San Diego County Farm Bureau (SDCFB)
San Diego County Water Authority (Water Authority)
San Diego Regional Water Quality Control Board (Control Board)
Special Agricultural Water Rate (SAWR)
Spill Prevention, Control, and Countermeasures Program (SPCC)
State Water Project (SWP)
Total Maximum Daily Load (TMDL)
APPENDIX B

INFORMED CONSENT DOCUMENT
San Diego State University
Consent to Act as a Research Subject

Farmers in an Urban Desert: San Diego County Farmers’ Identity
Construction Amidst a Shifting Regulatory Environment and Impending
Water Scarcity

You are being asked to participate in a research study. Before you give your consent to volunteer, it is important that you read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do.

Investigators
Primary Investigator: Rose Clark
Master of Applied Anthropology student
San Diego State University

Supervisor of Study: Frederick J. Conway, Ph.D., Assistant Professor
Department of Anthropology, SDSU

Purpose of the Study

Water has been described as the livelihood for farmers by San Diego County Farm Bureau board members. This research will explore the meanings farmers place on their water and the relationship of those meanings to their identity as farmers. Farmers’ understandings of water are influenced by the shifting regulatory environment concerning agricultural water use.

As California is the nation’s leading producer of agricultural products, and San Diego County relies on this agricultural industry worth $5.4 billion per year (American Farmland Trust n.d.), an understanding of farmers’ identities is of the utmost importance. The place of water in a farmers’ identity is important considering predictions of increasing water scarcity in California.

San Diego County farmers and officials dealing with agricultural water and its regulations are being recruited for this study. Those chosen for this study have been referred by other San Diego County farmers, or by board members of the San Diego County Farm Bureau.

Description of the Study

As a study participant, you will be asked a series of questions concerning farming in San Diego County, agricultural water, rules regulating water, agricultural water discount programs, and the identity of San Diego County farmers. This interview will be audio-recorded, unless you prefer not to be audio-recorded. If you would not like to be audio-recorded, hand written notes will be taken. This interview will take thirty to sixty minutes to complete, however the actual length of the interview is determined by you and your comfort level. If you wish to end the interview at any time and for any reason, you may do so with no ramifications. Study participation is completely voluntary.
**Risks or Discomforts**

The risks or discomforts that you may experience as a study participant include an inconvenient loss of time and the potential for discomfort when answering some questions. If you begin to feel uncomfortable, you may “skip” or refuse to answer any or all questions, and you may reschedule or end the interview.

**Benefits of the Study**

The benefits you may experience as a study participant include being able to think about and express your views as a San Diego County farmer. Once the study is complete, you will be able to learn how your fellow farmers view the same issues, thus allowing you a deeper understanding of your own community. I cannot guarantee, however, that you will receive any benefits from participating in this study.

Science may also benefit from this study. This study focuses on the identity of San Diego County farmers, of which little research has been done. New knowledge concerning identity and its construction can potentially be gained, as well as a deeper understanding of a particular community. A deeper understanding of the community of San Diego County farmers may prove useful to officials when determining new rules and regulations concerning San Diego County farmers and their agricultural water.

**Confidentiality**

The information gathered during interviews will be kept confidential, and therefore made available to only the primary investigator (Rose Clark), and her thesis committee. The information gathered (including any audio recordings), will be kept with the primary investigator (Rose Clark) at all times. If the information is not being used, it will be stored in a locked file cabinet, and only the primary investigator and her thesis committee will have access to it. Information gathered will be kept for a period of one year, after which all identifying information that links participants to study data will be destroyed. Signed consent forms will be retained for a period of no less than three years post study completion. As a study participant, you will not be able to review or edit notes or audio tapes prior to any publication.

Confidentiality will be maintained to the extent allowed by law.

**Incentives to Participate**

There are no incentives to participate.

**Costs and/or Compensation for Participation**

There are no costs to participate.

**Voluntary Nature of Participation**

Participation in this study is voluntary. Your choice of whether or not to participate will not influence your future relations with San Diego State University. If you decide to participate, you are free to withdraw your consent and to stop your participation at any time without penalty or loss of benefits to which you are allowed.
Questions about the Study

If you have any questions about the research now, please ask. If you have questions later about the research, you may contact the Department of Anthropology at San Diego State University at (619) 594-5527.

If you have any questions about your rights as a participant in this study, you may contact the Division of Research Affairs San Diego State University (telephone: 619-594-6622; email: irb@mail.sdsu.edu)

Consent to Participate

The San Diego State University Institutional Review Board has approved this consent form, as signified by the Board’s stamp. The consent form must be reviewed annually and expires on the date indicated on the stamp.

Your signature below indicates that you have read the information in this document and have had a chance to ask any questions you have about the study. Your signature also indicates that you agree to be in the study and have been told that you can change your mind and withdraw your consent to participate at any time. You have been given a copy of this consent form. You have been told that by signing this consent form you are not giving up any of your legal rights.

_____________________________________________
Name of Participant (please print)

_____________________________________________
Signature of Participant     Date

_____________________________________________
Signature of Investigator     Date
APPENDIX C

INTERVIEW GUIDELINE
Interview Questions for San Diego County Farmers

• How long have you been a farmer?
  o How did you decide to get into farming?
  o How many generations of your family participated in farming as their livelihood?
  o (If parents farmed) Did your siblings go into farming?

• Do you have other sources of income besides farming?

• How large (in acres) is your farm?

• Do you own or lease your land? (If both,) in what percentages?

• What are the primary crops produced on your farm?

• How does being a farmer is SD county affect your crop choice(s)? Why?

• How is water important to your livelihood as a farmer?

• Is water scarcity in San Diego County something that concerns you? Why?

• Is water conservation a major concern to you?
  o What water conservation methods do you use?
  o How does being a farmer in SD County affect your water conservation method choice?

• Are water regulations something that concern/impact you and your business (i.e. water quality acts, stormwater permits, reporting runoff either by yourself or with an irrigated lands group)? Which ones?
  o How do SD county water regulations (i.e. water quality, stormwater permits, runoff reporting) impact your life?
  o How would your business change if some of these ag water regulations did not apply (i.e. if you lived elsewhere)?

• Do you participate in the Interim Agricultural Water Rebate program (or SAWR) to receive discounted surplus water?
  o Have you in the past? When?
  o Did you find this program to be helpful? How?
  o How will you and your farming operation be affected if this program is discontinued?

• If the price of water rises, how do you think this will affect San Diego County farmers?
  o How do you think an increase in price will affect farmer with generations of family farming history versus gentleman farmers?
• What aspects of being a farmer in SD county are most important to you? (i.e. family history – family was farmers, desire to work with the land/outside, profit/money, location, water conservation methods, etc.)

• Where do you see yourself, and your business, in the coming 5 years? 10 years?
  o How does water factor into your future plans for farming? (i.e. continue while paying higher fees, employ more drastic conservation methods, stop farming, etc.)

• Are there any frustrations that you currently struggle with, or foresee that you may struggle with in the future besides water related concerns?

• Do you think that California will remain the top agricultural producer in the country in the future?

• Are there any other aspects or issues of farming and water that I should know about?

• Do you know of any other San Diego County farmers who I could contact and ask similar interview questions?

• If there is an important follow-up, would I be able to contact you again?
APPENDIX D

CODE MANUAL
Family: FAM
- GEN1: 1st generation
- GEN2: 2nd generation
- GEN3: 3rd generation
- GEN4: 4th generation
- SIBFARM: siblings in farming
- SIBnoFARM: siblings not in farming
- GREW: grew up on the farm

Farm: FARM
- $FARM: all income from farm, farm is main money provider
- $OUT: outside income to supplement farm income
- OWN: own all farming acres
- LEASE: lease all farming acres
- COMBO: lease and own farming acres
- M/D: bought/leased land from parents
- WELL: operated entire operation off of well water
- CITY: operate most of/entire operation off of city water
- H20COM: operate off of city and well water
- ORG: organic farming
- CLI: climate is a big factor for why they are farming in this location (SD)
- FAM: family owned and operated
- MAR: proximity to market is a reason for crop choice/location, they grow what will sell (local markets)
- LAND: chose location many years ago when land prices were cheap, may express frustration with land prices today and for the next generation

Crop Type: CROP
- AVO: avocados
- CIT: citrus
- LEM: lemons
- BER: berries (raspberries, blackberries, blueberries)
- VEG: vegetables
- LIVE: livestock
- MUS: mushrooms
- HOR: horticulture
- GRA: grapes (wine)
- SOD: sod
- COM: compost operation
- ORN: ornamental plants and palms
- SEE: seeds
- CHANGE: if farmed outside San Diego County, crops would change
- NOCHAN: if farmed outside San Diego County, crops would not change
- GVMNGR: grove manager
- $: choose the particular crop for monetary reasons
- FAM: choose the particular crop because of family history
- H2O: chose crop due to water type available

**Water: H2O**
- SCARIM: water scarcity impacts their business
- SCARnoIM: water scarcity does not impact their business
- DRI: drip irrigation
- MIC: micro-sprinkler irrigation
- SPRI: sprinkler irrigation
- HAND: irrigation with a sprinkler by hand (i.e. rose bud sprinkler)
- DRINK: drinking water for animals
- CHANGE: if water is more plentiful, they would change their irrigation techniques – may use more water
- noCHAN: if water is more plentiful, they would not change their irrigation techniques – efficient enough already
- %__: rough percentage of how much water is used of total cost
- ESSEN: water is essential to their farming operation
- WSP: Water saving procedures – practice water conserving practices on area not farmed (i.e. not watering landscapes, sweeping, low flow toilets/showers, etc.)
- PERMIT: have obtained a regional water quality control permit
- COST: cost of using water to farm impacts business negatively
- CARE: understanding that there is a need to be careful with water even without the regulations in place
- RO: RO systems put in to increase the quality of water used on the crop
- RECYC: use recycled water
- 1STHAND: observe irrigators first hand to make sure that water is being used correctly
- TECH: moisture/soil sensors to monitor water/moisture level, technology is used to monitor irrigation efficiency
- COOL: water used for cooling animals (sprinklers)
- AVAIL: availability of water is more important than price
- QUAL: water quality issues (mostly due to salinity levels – well or city water)

**Regulations: REGS**
- CLH20: clean water act negatively affects their farming operation
- TMDL: total maximum daily load negatively affects their farming operation
- STRH20: stormwater permits/problems
- ILG: reporting runoff with the SD County Farm Bureau’s irrigated lands group
- REALONE: reporting runoff by themselves
- RUN: reporting runoff problems, issues with maintaining runoff
- QUAL: regional water quality control board problems
- IAWP: interruptible ag water program (MET), they have participated in this program in the past or presently
- IAWP0UT: opted out of IAWP last year
- SAWR: special ag water rate program (water authority), they have participated in this program in the past or presently
- NoCHAN: if regulations were less strict, they wouldn’t change anything
- CHANGE: if regulations were less strict, they would change some things about their farming operation (i.e. use water more freely, etc.)
- NEG: regulations impact farming negatively, cost of compliance, fees, cutback negatively affect business
- IAWPNeg: IAWP impacted farm negatively
- BUILD: need to build a retention pond or other structure for runoff to comply with regulations enforced, re-organized all or part of farm to comply with runoff regulations
- GRANT: applying or have applied for grants to help them comply with current regulations

**Gentlemen Farmers: GEN**
- HOB: hobby is farming, hold other jobs for main source of income, this is more for fun
- NICK: nickname such as suburban farmer, city farmer, hobby farmer 2nd income farmer used to refer to them
- 2NDIN: 2nd source of income
- noREAL: not a real farmer, used for tax deduction or landscape
- GO: if problems with water continue, they will be the first to leave
- STAY: if problems with water continue, they will last longer than family farmers, may increase in number compared to family farmers
- SAME: if problems with water continue, both groups will be affected equally, depends on a variety of factors

**Important Aspects: LIKE**
- FAM: good family values are promoted, good life for kids
- OUT: enjoy being outdoors
- LIFE: good lifestyle is promoted, good quality of life
- KNOW: farming is what they know, how they were raised, the lifestyle is engrained
- SCH: they went to school to be a farmer
- HON: believe that farming is honest work, promotes hard work, good work ethic
- PEOP: work with good people, qualified labor, working together as a community
- COMP: not as competitive as other businesses, different/better philosophy or way of doing business
- PASSION: passionate about ag career
- $: ag as a business that makes money
- LOCAL: enjoy being a local provider and part of the slow food movement
- WOL: hope to pass farming as a way of life on to children
• SATIS: personal satisfaction, challenging (therefore rewarding), different everyday

Frustrations: DIS
• PEST: pests, using pesticides and being concerned for people’s safety
• LAB: labor, hiring help, paying for help
• URB: urban encroachment
• REG: excessive regulations, regulations limit farming ability, regulations are very strict
• HRS: long hours
• STRESS: high stress/worry job
• POLITIC: politics/politicians are a problem
• SMELT: smelt issue is frustrating/aggravating, environmental issues cause problems
• DEVELOP: development pressure is a problem
• COMP: increased product competition from other countries is frustrating and damaging to their business
• $: ag is very cash intensive, budget, money issues
• QUAR: quarantines are a worry that could do much potential damage to their farming operation
• H2O: water cut backs put pressure on farming business
• KNOW: people as a whole do not understand ag/farming
• ANIMAL: animal welfare issue
• STNDRD: US has very high ag standards which are difficult to meet
• ECON: economic pressure, market pressure, price takers

Future of Agriculture: FUT
• CAYES: CA will remain the top ag producer in the US
• CANO: CA will not remain the top ag producer in the US
• SDYES: SD County will remain a top producing county
• SDNO: SD County will not remain a top producing county
• SOTP: in the future, farmers will stop farming instead of switching crops in the future, not sure if business could survive cost increases
• EXP: in the future, ag business will expand/diversify (i.e. increase tree density, adopt/upgrade irrigation technology, etc.)
• LOCAL: in the future, ag business will move more towards fresh/local foods (i.e. slow food movement, farmers markets, etc.), in future more emphasis put on local foods vs imported foods
• SWITCH: in the future, if prices go up, they would switch crops/diversify to keep up with the market
• EDU: education is important for ag future (university systems)
• DESAL: desal plant will impact future
• INFRA: infrastructure changes are needed if ag is to survive
Attitudes: ATT

- RESI: believe that farmers are resilient people
- EFFI: believe they are efficient growers and water users, sometimes more so than others
- THINK: aggravation over being falsely thought of a certain way (i.e. treating labor poorly is not true, over using/poorly using water is not true)
- UPKEEP: believe they would maintain/up-keep land for future generations, even without current and future regulations
- LABOR: feel they treat their labor well, or better than other professions, and that labor is sometimes considered as family
- AWAY: believe that some crops should be grown elsewhere (i.e. avocados being grown not in SD, but in more tropical climates)
- BLEAK: negative view for future of ag (future is bleak)
- LAST: worry they will have to get out of farming, or that they may be the last generation to carry on their family business
- REG: regulations aren’t all bad – all businesses have to deal with them
- NoEQUAL: believe that regulations are not enforced equally (only on a complaint basis), not as “blanket” regulations (ex. Crop vs crop, farm vs urban)
- IMPACT: believe that ag as a business sector impacts the community (SD)
- CAREER: feel that agriculture is their only career option
- BACKUP: feel that they have a second/backup option if ag fails
- SKILL: feel they really know/understand farming better than others, feel skilled/useful

Education/Work/Knowledge: KNW

- SCHAG: went to college for ag
- SCH: went to college for an unspecified degree
- OTHER: worked another career before entering a career in agriculture
- EXACT: exact knowledge on ag (stats)
- VAGUE: vague knowledge on ag (no exact numbers mentioned)
- SAY: have a particular saying that pertains to water use and agriculture

Community: COMM

- RWQCB: member of regional water quality control board
- AC: member of the avocado commission
- BDofFB: member of the board of directors of the Farm Bureau (or have been in the past)
- SOCIAL: socialize with other farmers
- RELY: rely on 3rd party to help with relationship(s) between farmers and regulators