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Bioregional communication: watersheds, community participation and synchronicity

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Bioregional communication:
Watersheds, community participation and synchronicity

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has met the thesis requirements of Iowa State University

Signatures have been redacted for privacy

DEDICATION

To my parents Corrintha and Bob who have given me their unconditional love and support for forty-five years and counting. Thank you Mom and Dad for making water a part of my life. To my daughters Bea and Robin who wouldn't let me give up. Thank you Bea for teaching your sister to love shopping at second-hand clothing stores. Thank you Robin for laughing at me when my eyes were glazed over from too many hours at the computer. To my partner Jeff who believed in me even when I was not so sure myself. Thank you Jeff for bringing music into my life in so many ways. I couldn't have done it without you all.

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ABSTRACT

This thesis is a qualitative study about community participation in watershed management. Specifically, it looks for evidence of bottom-up participation. The study is a meta-evaluation of eighteen watershed projects from the perspective of local change agents.

The watershed projects are evaluated in terms of levels of participation from top-down to bottom-up. Agent understandings of participation, their processes of building citizen partnerships and their experiences of trust within communities are explored.

The findings show that there is no consensus among agents on what bottom-up participation means, that participation falls along a continuum from ritual to authentic and that participation depends on building trust between diverse stakeholders.

The study suggests that authentic communication among diverse stakeholders can build trust, social networks and shared social norms necessary for sustainable bioregions. Beyond this, the notion of synchronicity adds an element of coincidence, or randomness to the dynamics of a project.

SETTING THE CONTEXT

The care of Rivers is not a question of Rivers, but of the human heart.

- Tanaka Shozo (1841-1913)

From the Rockies to the Appalachians--from the Canadian border to the tip of the Louisiana boot, the Mississippi River watershed funnels oceans of water from the heart of the United States into the Gulf of Mexico [Figure 1]. Within the larger Mississippi River watershed lie many smaller watersheds [Figure 2]. As water drains southward, one watershed empties into another carrying nutrients to the Gulf and enriching the marine environment. But one person's nutrient can become another person's pollutant. Increasingly too many nutrients are entering the Gulf because of our daily activities in the hundreds of watersheds upstream. Excess nutrients cause an explosion of algae to grow. When algae dies and decomposes, oxygen is consumed leaving the water oxygen deficient, or hypoxic.

While hypoxic zones are a natural phenomenon in bodies of water, excess nutrients have caused the hypoxic zone in the Gulf to expand so that it now disrupts rather than nourishes marine life. This "dead zone," as it has come to be known, is now larger than the state of Connecticut and growing. Marine animals can be found dead or dying on the sea floor beneath the zone for two to three months of the summer (Harper and Rabalais 2). As a result, the Gulf of Mexico's multi-million dollar fishing industry is imperiled (Hanifen et al. 1, 5-6).

How can the problem of the Gulf's hypoxic zone be solved when most of the excess nutrients are coming from watersheds in states upstream? Historically, problems with the Mississippi River watershed have revolved around finding technological solutions to navigational needs through the

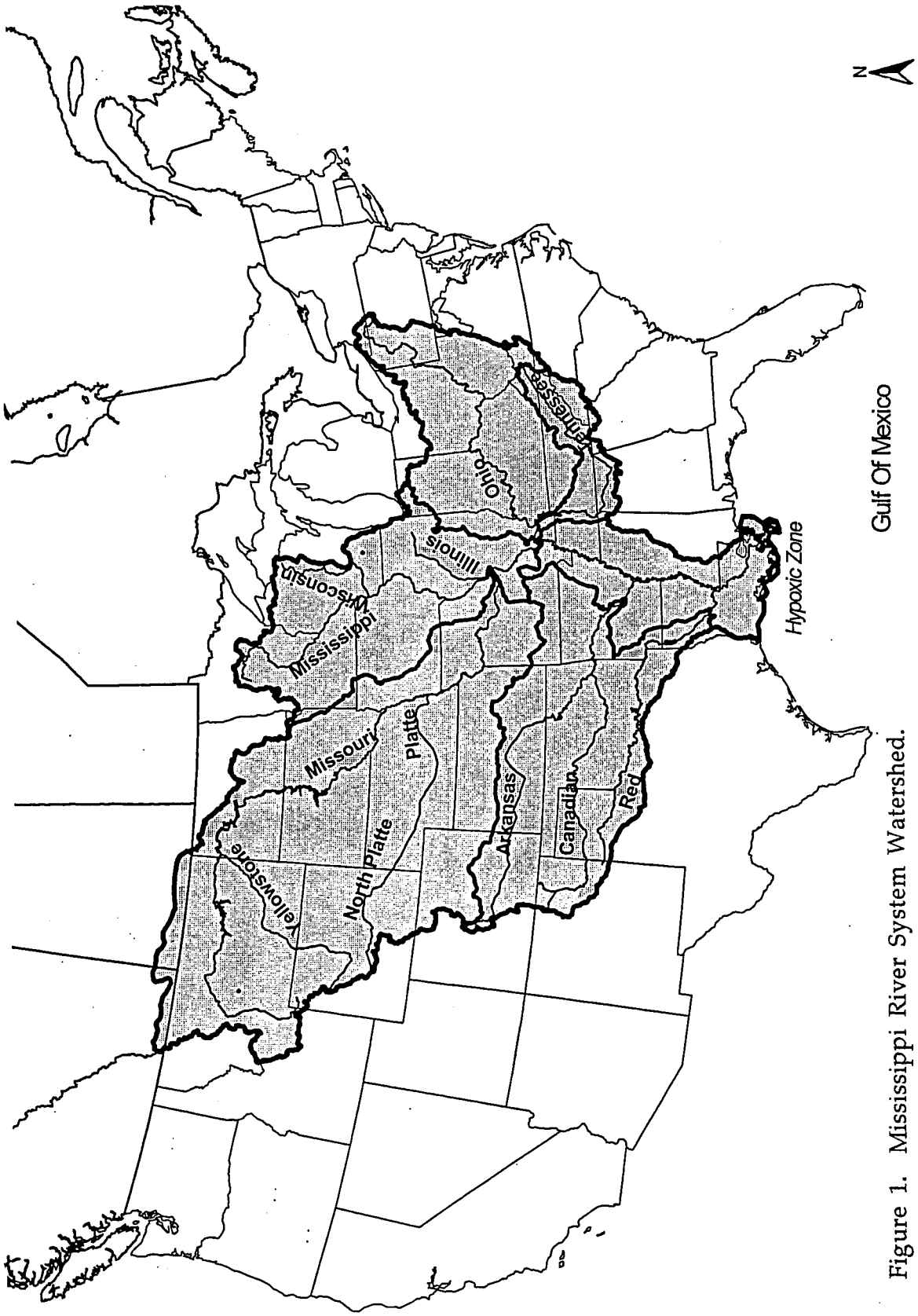


Figure 1. Mississippi River System Watershed.

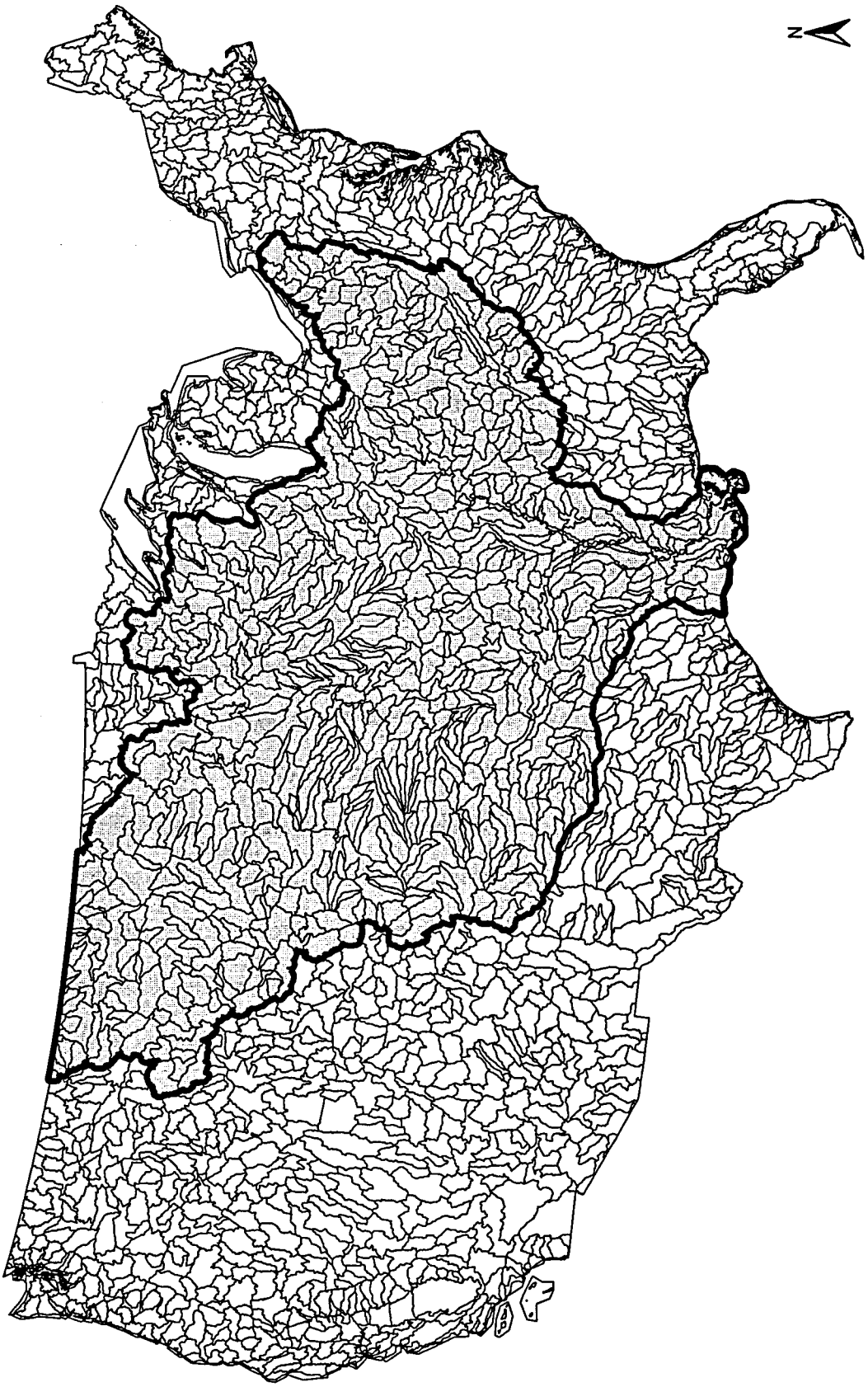


Figure 2. U.S. Watersheds

construction of locks and dams. But there are no such technological fixes for the hypoxic zone because solutions require changing the behavior of all of us who live in smaller watersheds upstream.

To address the problem of the hypoxic zone, the federal government has shifted from strategies that emphasize overcoming and manipulating nature to strategies that emphasize understanding and working with nature--a shift requiring not only technical solutions, but social solutions as well.

By working together in the watershed we live in, solving our local pollution problems, we ultimately solve the problem of the hypoxic zone in the Gulf of Mexico. In other words, we save the whole by saving the parts (U. S. Environmental Protection Agency, 1996; Johnson and Bouzaher, 1995; National Research Council, 1993)[1]. This requires that we begin to think of where we live and work in terms of not only political boundaries, but watershed boundaries as well. New communities based on watersheds are forming to work on social as well as technical solutions to pollution problems.

This paradigm expansion from technical solutions to include social solutions has required a similar shift in policy from top-down to include bottom-up participation. So if not top-down, what is bottom-up?

The purpose of my study is to discover how agency personnel understand, experience and implement bottom-up participation in the context of watershed management for the purpose of exploring communication research that responds to participatory initiatives.

My thesis is an ethnographic study focusing on bottom-up participation in watershed management. I spent the greater part of the Spring of 1996 traveling across Iowa talking to local change agents involved in watershed projects. I was there as a graduate student studying mass communication.

Why study the notion of bottom-up participation in watershed management from a communication perspective? Communication research and policy have long been intertwined. Traditionally, top-down approaches to natural resource management assume that innovations for solving problems will come from those with expert knowledge in the scientific community. In a top-down approach, communication is a matter of transferring information about an innovation from the scientific community to the lay community. This approach assumes "that an innovation should be diffused and adopted by all members of a social system, that it should be diffused more rapidly, and that the innovation should be neither re-invented nor rejected" (Rogers 100, 1995).

In contrast, a bottom-up participatory approach assumes that answers to natural resource problems lie within both the scientific community and the lay community. Bottom-up participation helps to merge expert knowledge with local knowledge, resulting in the empowerment of citizens at the local level (Chambers, 1983; Fals-Borda & Rahman, 1991; Freire, 1992; Park et al., 1993; Warren, et al., 1989; Warren, 1991; Warren, et al., 1995). This assumption calls for new theories and models of communication that increase dialogue between the scientific and lay communities and between publics in order to find solutions to local problems and improve local acceptance. Specifically, dialogical theories and models of communication are needed for understanding and facilitating "mutual understanding and/or collective action" (Rogers and Kincaid 31).

Over the years, I have studied the notion of bottom-up participation in the context of development communication in lesser developed countries (LDCs). I wondered what bottom-up participation would look like in more developed countries (MDCs). Specifically, I wondered how change agents at the

local level were experiencing and implementing bottom-up participation. Was dialogue occurring and at what stages in a project? Who was participating? And what were they doing?

I chose to look at watershed projects in Iowa for several reasons. First, while studying the notion of bottom-up participation in LDCs, some of my research focused on bottom-up participation in watershed management. As a bioregionalist, I was attracted to the notion of solving environmental problems within watershed communities. The connection between physical networks and social networks is intriguing to me. It is interesting to think about people becoming aware of their residence in terms of watersheds as opposed to pavement or political boundaries.

Then I ran across a newspaper article about a participatory watershed project in Iowa. Here was my chance to explore the notion of bottom-up participation in an MDC right where I live and work. Even better, I could explore the topic within the framework of watersheds. I reread the article, which said, "The new project will let farmers in the...watershed demonstrate voluntary land management practices important to water quality and share their experiences with other farmers." The word "let" did not sound very participatory.

To be fair, the choice of words was made by the author of the article and not by the folks involved in the project. However, it did make me curious about how bottom-up participation was being interpreted and implemented. From my research on watershed projects in LDCs, I knew a consensus on what bottom-up participation meant did not exist. Participation ranged from ritual to authentic. I decided this was what I would like to explore.

To find out more about watersheds and public participation in the U. S., I began attending conferences and reading literature on the subject. In doing so I learned about the hypoxic zone and the fact that Iowa is considered to be one of the major contributors of excess nutrients to the Gulf of Mexico.[2] I also found out there were more than 40 watershed projects in Iowa that involved public participation. While Iowa is not representative of other states, and may be in the earlier stages of wrestling with bottom-up participation, I felt it was an important state to look at because of its connection to the hypoxic zone. Iowa also provided a choice of 40 nearby watershed projects from which to choose for my study.

I wanted to explore what was happening in watershed projects around the state in order to understand how communication models and theories could help mobilize people to solve local pollution problems in watershed communities. Specifically, I wanted to understand how agents were implementing bottom-up projects and how it compared to my own theoretical understanding of participation. Only then did I feel I could discuss how mass communication models and theories might contribute to bottom-up initiatives.

My methodologies include interpretivist and constructivist perspectives of Denzin (1989) and Lincoln and Guba (1985) respectively. Using a process and comparative evaluation approach outlined by Patton (1990), I explored public participation as it was experienced by change agents whose agencies sponsored local watershed projects in Iowa.

What I found is that bottom-up participation or local partnering, as it is often called, is spoken of frequently these days among government agents involved in natural resource management. However, there is no consensus on what the terms mean or how to go about involving the public. While bottom-

up participation is straightforward in meaning, acting on such a concept is complex. At the root of good partnering lies trust. Building trust requires efforts at many levels in the community, which is not always in the control of the agent. I found there was sometimes an element of synchronicity, or a seeming coincidence of events and people converging in the right place at the right time.

My point is that if you look at a project that seems to have many partnerships and try to find the key to that success, the answer may not lie wholly with any one technique of the agent, but rather may be influenced by synchronicity. So if you are looking for reasons for successful partnerships only by looking at results, without taking into account the notion of synchronicity, assumptions about what works might be partial truth.

Notes

[1]The notion of saving the whole by saving the parts has its roots in the environmental movement of bioregionalism. Bioregionalism focuses on solving sustainability issues from the perspective of a particular ecosystem in which the problem exists rather than on state or national boundaries. Bioregional boundaries can be defined by the presence of plants and animals native to a particular region such as tall grass prairies, by altitude, such as alpine forests, or latitude, such as tundra or by watersheds, an area of land that drains into a lake or river. "Bioregionalism calls for human society to be more closely related to nature (hence, bio), and to be more conscious of its local, or region, or life-place (therefore, region)...It is a proposal to ground human cultures within natural systems, to get to know one's place intimately in order to fit human communities to the Earth, not distort the Earth to our demands" (Van Andruss, Plant, Plant and Wright 2).

[2]Watershed communities in Iowa have an important role to play because Iowa and Illinois are considered to be major contributors of NPS pollution to the Gulf of Mexico (Goolsby and Battaglin). It is generally agreed that agriculture contributes significantly to NPS pollution (Hallberg, 1:5; Burt and Alt, 1). The fact that Iowa is a major contributor of NPS pollution to the Gulf is not surprising because most of the state's land area is devoted to agriculture (Hallberg 1:5).

Farm organizations accept studies concluding that the Upper Mississippi River watershed states of Iowa, Minnesota, Wisconsin and Illinois are primary sources for NPS pollution in the Gulf and a significant contributor to the hypoxic zone, but they think more studies need to be done to determine the contribution from non-farm sources of NPS pollution. They accept agriculture as having some responsibility, but they feel agriculture is being unfairly burdened. They feel a better approach to NPS pollution would be one that is focused less on agriculture and more on rural and urban working together to discover and reduce all NPS contributions (Farm Bureau, 1996).

DEEPENING THE CONTEXT

The problems of the hypoxic zone and multitudes of related pollution problems in smaller watersheds are the result of non-point source (NPS) pollution.[1] In urban areas, sources of NPS pollution are municipal and septic systems, soil washing away from construction sites and lawn chemicals, grass clippings, oil and trash washed into storm drains that empty into waterways. In agricultural areas, sources of NPS pollution are septic systems, soil erosion, fertilizers, insecticides, herbicides, and improper management of grazing lands and animal confinement facilities. NPS pollution "is the result of our daily actions, our daily management of the land around us. While the environmental impacts of individual actions may hardly be noticeable, the cumulative effects may be great..." (Hallberg 1:5).

The hypoxic zone can be viewed in terms of "the tragedy of the commons" (Hardin and Baden 20). The tragedy of the commons asserts that individuals make rational choices in their daily lives to maximize their personal gain. The negative impact individually is negligible, but the negative impact to commonly shared resources of land, air and water can be significant. NPS pollution is a tragedy of the commons outcome.

Responding to the problems of the hypoxic zone, as a tragedy of the commons issue, the Secretary of the Louisiana Department of Environmental Quality questions how the problem will ever be solved.

> We often speak of sustainable development and using our natural resources wisely. Killing a large area of the Gulf every year cannot be considered responsible stewardship by even the most indifferent polluter...How do I protect the environment of my state when the problem is not created in or by my state? How do we as states, who by the way are demanding that the federal government get off of our backs and let us regulate our states, handle interstate transport problems? (Kucharski)

No simple technological solutions exist that will remedy the transport problems of NPS pollution as there was for transport problems of navigation. Currently, the U. S. Environmental Protection Agency promotes increasing bottom-up participation in local problem solving and lessening top-down only approaches. The solution to NPS pollution will come about voluntarily by "people working together to protect public health and the environment-community by community, watershed by watershed" (U. S. Environmental Protection Agency 1).

A paradigm expansion, from top-down to bottom-up participation, is occurring in many areas of policy including natural resources. For this to occur, bottom-up participation in policy needs reinvigorating in response to the current devolutionary movement towards less government and more local control that the Louisiana Secretary alluded to. "Scholars and political activists across a wide ideological spectrum agree (at least in general terms) on the need to prune and reform the national government, enhance state and local authority, reduce regulation, and reinvigorate the voluntary sector" (Galston 58). In other words, the strength of a democracy in a devolutionary time depends, in part, on broad based local involvement.

While bottom-up participation is a policy issue, communication research plays a role because participation cannot occur without communication. But genuine participation is not possible with just any kind of communication. "For too long...we have been used to a vertical, unilateral and authoritarian communication. During that time, all the significant social institutions--the family, the school, the church, the government-practiced top-down communication as if there were no other way to communicate (Servaes et al. 11).

As notions of democracy and participation have evolved, so too has the field of communication because of its involvement in policy and planning (Servaes 29). Up until the 1970s, most communication models associated with policy and planning described one-way linear communication featuring source-message-channel-receiver components. The models did not account for the influence that interpersonal communication might play in the processing of information (Rogers and Kincaid 31, 35).

> In other words, in real-life, natural settings, communication can be understood better if it is not broken up into a sequence of source-message-channel-receiver acts, but rather examined as complete cycles of communication in which two or more participants mutually share information with one another in order to achieve some common purpose, like mutual understanding and/or collective action. (31)

Communication scholar George Gerbner noted in 1983 that social and policy aspects of communication research are "areas in ferment" (qtd. in Servaes 29). The ferment is due, in part, to the paradigm expansion in policy from top-down to bottom-up participation and underlying assumptions of knowledge (Dervin et al. 14).

If not top-down, what is bottom-up? If authentic participation depends on authentic communication, how might communication research respond? This study springs from that ferment. The purpose of my study is to discover how agency personnel understand, experience and implement bottom-up participation in the context of watershed management for the purpose of exploring communication research that responds to participatory initiatives.

The following section provides a framework of communication and associated social science theories and models from various paradigms that influenced my interpretation of bottom-up participation in watershed management.

Theoretical Framework

Enhancing democratic principles in a devolutionary time depends on strong civic involvement. The U. S. has traditionally excelled in this area as noted and admired by Alexis de Tocqueville in his book Democracy in America. He wrote, "Americans of all ages, all stations in life, and all types of disposition are forever forming associations. There are not only commercial and industrial associations in which all take part, but others of a thousand different types--religious, moral, serious, futile, very general and very limited, immensely large and very minute..." (qtd. in Putnam 66; Novak V).

But civic involvement, the foundation of our Madisonian heritage, has been in decline most notably over the past several decades and beginning perhaps at the turn of the century (Putnam 65; Friedland and Sirianni, 1995). Over time democracies can lose their vibrancy as State agencies take over social needs traditionally met by local civic institutions. Civic involvement becomes little more than the occasional trip to the voting booth. We have become "inert citizens with little social consciousness and commitment...Therefore, a democratic system must establish itself again and again, very slowly and painfully" (Bordenave 11).

The notion of a democracy reestablishing itself can be discussed in the context of bottom-up participation and natural resource policy. The notion of bottom-up participation in policy is relatively new. Only in the 1920s and 1930s did studies by social scientists begin to appear supporting the notion of bottom-up participation in policy decision making. And decades later, into the 1940s, it was still generally assumed that technical training and scientific data were the necessary requirements for decisions in the public interest--"the greatest good for the greatest number" (Pizor and Holler 889).

In terms of natural resource management, the idea of public participation did not begin to take hold until the 1960s (Sirianni and Friedland). Discussion on public participation in watershed management in the U. S. becomes evident by 1967.

In 1977, the question is raised as to how much public participation is needed in watershed management. "Project sponsors have successfully involved the public in project development in many cases. At the same time the fact that serious objections have been raised in the very late stages of planning or construction has led to reconsideration of what constitutes sufficient public involvement" (National Watershed Congress 150).

One suggestion was that sufficient public involvement meant involving the public in early stages of a project. Participation should result in an individual level of awareness, which "enables a person who is part of the physical and social condition that constitutes the problem, to think about his experiences under current circumstances and to initiate action to seek out the causes of the problem and possibilities for relief" (Felstehausen 38).

The evolution of participatory methods for problem solving in natural resource management continued to expand into the 1980s. The term "civic environmentalism" was coined, legitimizing the notion of civic involvement in natural resource policy (Sirianni and Friedland). But the question about how much public participation is necessary in watershed management continued. "How, when, and to what extent the public participates in water planning and management questions has stimulated much scholarly work and managerial consternation" (Pizor and Holler 890).

Public participation is still a major topic of discussion in the 1990s as evidenced in numerous conferences on the subject. There is an increased effort

by the federal government to involve the public in natural resource management "as a complement, not a substitute, to regulation, and a strong federal role is often required to trigger civic approaches" (Sirianni and Friedland forthcoming). This policy approach is an attempt to reinvigorate the Madisonian heritage of deliberative democracy in the spirit of devolution and in response to declining civic involvement eroded by plebiscitary democracy.

> Deliberative democracy introduces a different kind of citizen voice into public affairs than that associated with raw public opinion, simple voting, narrow advocacy, or protest from the outside. It promises to cultivate a responsible citizen voice capable of appreciating complexity, recognizing the legitimate interests of other groups (including traditional adversaries), generating a sense of common ownership and action, and appreciating the need for difficult trade-offs. And one of the central arguments of deliberative democratic theory is that the process of deliberation itself is a key source of legitimacy, and hence an important resource for responding to our crisis of governance. (Friedland and Sirianni 2)

A policy of deliberative democracy is a democracy attempting to reestablish itself. Because of the connection between communication and policy and planning, communication research will also reestablish itself.

In the past, linear models of communication featuring source-message-channel-receiver components have dominated communication research associated with policy and planning (Rogers and Kincaid 31). Linear models fit a top-down policy approach where there is "a tendency to consider the primary function of communication to be persuasion, rather than mutual understanding, consensus and collective action" (Rogers and Kincaid 39). Linear models take human communication out of its context. It assumes "that the individual mind is an isolated entity, separate from the body, separate from other minds, and separate from the environment in which it exists" (Rogers and Kincaid 38).

Increasingly, more dialogical models of communication have appeared. One area of mass communication research that has explicitly acknowledged the notion of deliberative democracy by promoting community dialogue is in the area of public journalism (Rosen and Merritt, 1994; Pew Center for Civic Journalism, 1995; Friedland and Sirianni, 1995). Here, the press takes on roles of reviving civic life and promoting public dialogue. "[P]ublic journalism seeks to hold citizens themselves accountable to standards of complex and responsible deliberation, even as it assists citizens in holding their elected leaders accountable" (Friedland and Sirianni 4).

Information campaigns is another area of mass communication research that has debated the social implications of centralized and decentralized approaches to diffusion of information. "An information campaign...is a form of social intervention prompted by a determination that some situation represents a social problem meriting social action" (Salmon 20). Who defines a problem is the important question because the definers ultimately determine the cause and location of the problem.

> Given that no single definition of a problem is uniquely accurate, the power to control the framing or defining of an issue is of paramount importance if an organization is to gain acceptance of its proposed solution. Without question, this power resides disproportionately with government, corporations and other institutions possessing legitimacy, social power and resources and access to the mass media. (Salmon 24)

Bottom-up participation is an attempt to broaden the knowledge base from which problems are identified in order to empower citizens and increase local acceptance of solutions. It is an attempt to ground expert knowledge in local knowledge. In genuine bottom-up participation, the public participates in defining problems, finding solutions and utilizing resources of institutions. This changes the traditional production of knowledge.

> Genuine popular participation in the production of knowledge has implications, of course, not only for the realization of classical notions of democracy but also for the body of knowledge that will be produced. By altering who controls knowledge and what knowledge is produced, such participation may also change the very definition of what constitutes knowledge. (Gaventa 40)

Bottom-up participation supports the inclusion of a decentralized approach towards development and transfer of information about a problem and changes the traditional role of mass communication research. Centralized and decentralized approaches toward transfer of information can be represented by two models [Figures 3 and 4].

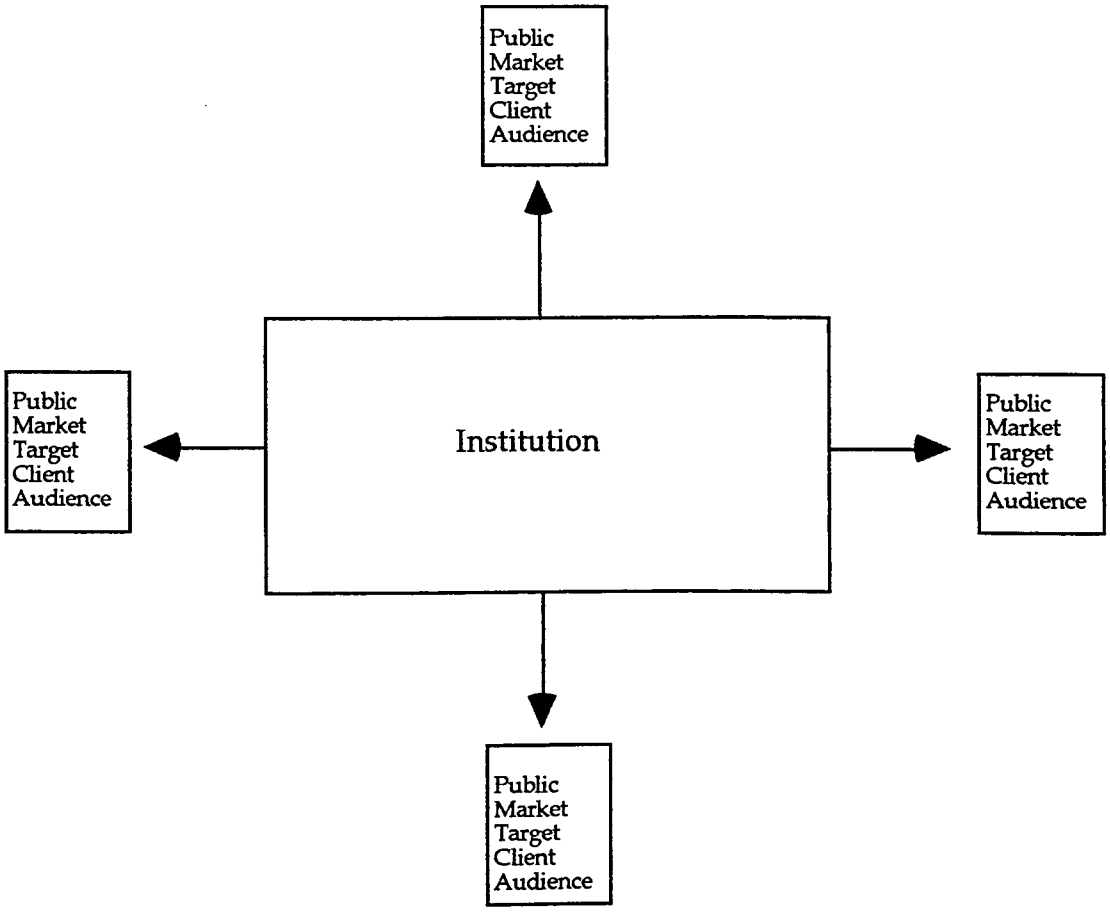


Figure 3. Top-down Information Campaign Model.

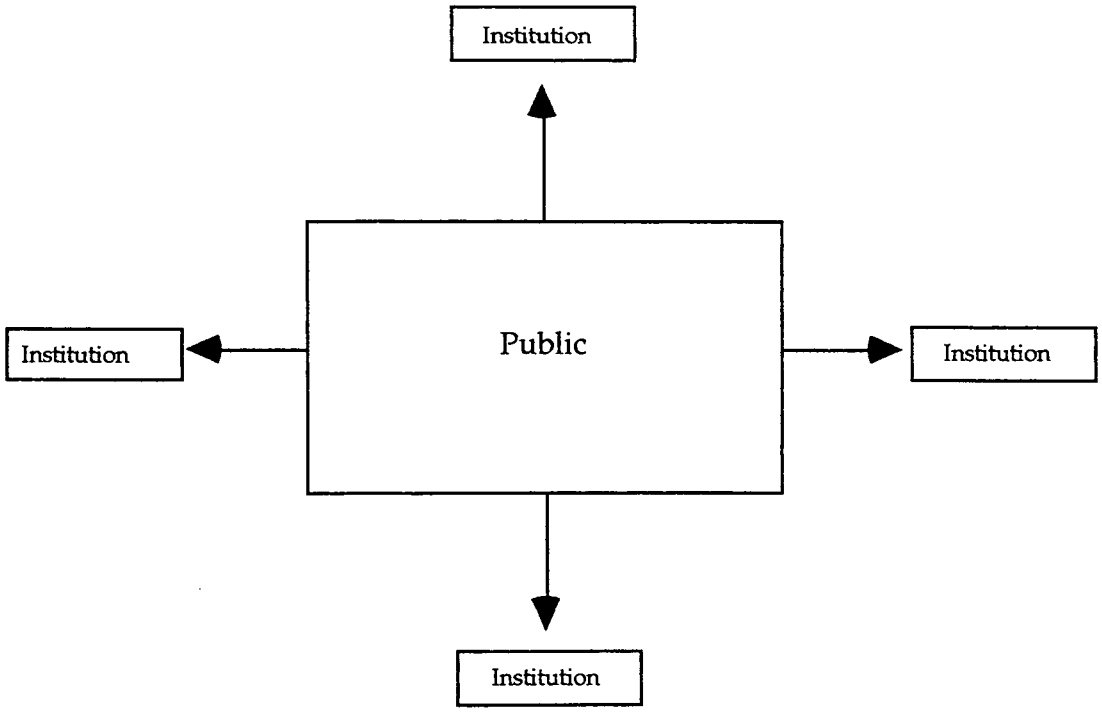


Figure 4. Bottom-up Information Campaign Model

A top-down model of information campaigns assumes knowledge and solutions come from bureaucracies and the scientific community. The role here for communication research is to determine campaign effectiveness. The interest of institutions in a top-down approach is focused on attitudes and behaviors of individuals. When institutional policy becomes more participatory, the role for communication research, becomes more about promoting dialogue (Rakow 179-180).

> Note what happens when an interest in individual "behavior" is replaced with an interest in collective action. Collective action is only possible when the public has the means to discuss and reflect and *exert* decision-making authority, not simply acquiesce to it. To divide individuals into publics, markets, targets, clients, or audiences is to maintain the flow of communication from the institution *to* people, preserving the institution's

> position of authority over them and preventing collective discussion and decision making *among* those groups. (178)

Bottom-up proponents acknowledge that policy debates in a democratic society are inherently contentious and dialogue among a variety of stakeholders should be encouraged (Hahn et al., 1994; Contant, 1996). In the short run, it takes time to bring stakeholders together and to find common ground on policy issues, but in the long run, such consensus building helps to strengthen local governing abilities and lessens public conflict when policy is put into place (Wertheim, 1983).

The challenges of building partnerships are many and errors are inevitable. First, because what is considered rational differs dramatically and often incompatibly among stakeholders with different knowledge bases. Second, because no individual or organization in the public or private sectors is socially neutral about sustainable ecosystem management for the benefit of society as a whole. Negative externalities that might affect people downstream are often ignored because of limited time, money and deadlines. And finally, because of the nature of scientific knowledge which "abstracts slices out of the socio-ecological systems but never fully comprehends the whole of them" (Freeman 404).

To reduce errors, the EPA promotes deliberative democracy on a watershed level using an environmental dispute settlement approach that emphasizes voluntary teamwork.

> [The environmental dispute settlement approach] relies on a stakeholder model for organizing deliberation, rather than on open community meetings. A limited number of representatives from affected interests agrees upon rules that are conducive to mutual understanding of each other's interests and perspectives, and seeks common ground for action...The circle of deliberation can be extended considerably by communication of stakeholder representatives with their grassroots constituencies during the negotiations. (Friedland and Sirianni 2)

The EPA, along with other federal and state agencies, provides funding to local watershed initiatives that promote a voluntary teamwork approach between public and private sectors at the federal, state, tribal and local levels. It "gives those people who depend on the aquatic resources for their health, livelihood or quality of life a meaningful role in the management of the resources... [and] can build a sense of community" (U. S. EPA 4).

The notion of building a sense of community is spoken of frequently these days. A sense of community is necessary in a devolutionary time when local needs are to be met increasingly through bottom-up participation.

The notion of building a sense of community within watersheds, or the linking of physical environments to social environments, has been discussed in sociology as landscape sustainability. Landscape sustainability depends on cooperative bottom-up participation by diverse stakeholder groups to overcome tragedy of the commons dilemmas.

> Landscape sustainability can be defined as the ability of the communities tied to a landscape to utilize their resources to ensure that all members of present and future citizens of living in that landscape, as well as those in adjacent landscapes and those landscapes dependent on it, can attain a high degree of health and well-being, economic security, and a say in shaping their future while maintaining the integrity of the ecological systems on which all life and production depends. (Kline, 1994, cited in Flora, 1997)

Landscape sustainability depends on the linking of interests across landscapes. Two types of communities are important players in developing sustainable ecosystems that overcome tragedy of the commons dilemmas. "*Communities of interest* are composed of interactions among people who may live anywhere in the world but are linked through the values they derive from the landscape. *Communities of place* are composed of the interactions of individuals who live in a particular community" (Flora 1, emphasis in original)

Communities of interest and communities of place provide a context in

which to view the interests of those concerned with or impacted by the hypoxic zone, with those whose interests are focused on NPS pollution in smaller local watersheds. Landscape sustainability depends on available capital resources within the landscape including financial and manufactured capital, human capital, environmental capital and social capital (Flora 2).

For the purpose of this paper, the notion of social capital is of particular interest because deliberative democracy is inherently connected to social capital and social capital is inherently connected to communication among diverse groups (Friedland and Sirianni 1, 8). Social capital has a number of interpretations. "Social capital in a landscape is defined as reciprocity and mutual trust" (Flora 7). Others define social capital as "features of social organization such as networks, norms and trust that facilitate coordination and cooperation for mutual benefit" (Putnam 67). Still others define social capital as:

> ...[S]tocks of social trust, norms and networks that people can draw on to solve common problems. Networks of civic engagement, such as neighborhood associations, sports clubs, and cooperatives are essential forms of social capital. The denser these networks, according to social capital theory, the more likely that members of a community will cooperate for mutual benefit. This is so, even in the face of persistent problems of collective action... (Friedland and Sirianni 7)

Building a sense of community as a way of creating sustainable watershed landscapes depends in part then on building social capital, which in turn depends on communication among diverse groups, with the ultimate goal of creating shared norms based on trust and reciprocity. The belief is that social capital can be built by diffusing information into the community through multiple networks of diverse stakeholder groups.

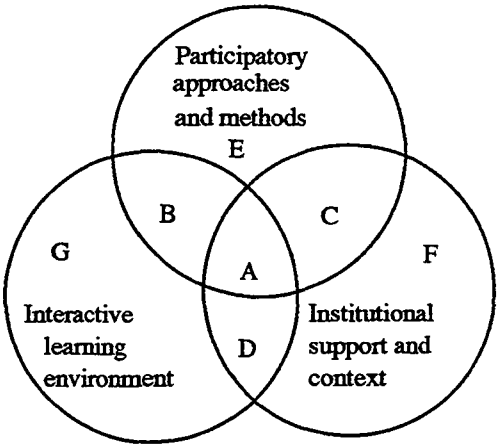
In communication research, public journalism explicitly recognizes the need to build social capital and responds by using newspapers as a forum for deliberative democracy to take place (Friedland et al., 1996).

The phenomena of moving information out into the community through representatives of diverse stakeholder groups is supported by the notion of "the strength of weak ties" (Granovetter 1360). Weak social ties mean two individuals do not share very many mutual friends so each individual's network of friends does not overlap. Strong social ties mean two individual's network of friends overlap. If the goal is to diffuse ideas into the community at large from a small group of people, it makes sense to work with a small group of diverse individuals with weak social ties because their network of friends will not overlap and be large. Information going out from a small group of people with strong ties will tend to stay within a small social circle because strong social ties mean overlapping networks of friends (Granovetter 1366).

Communication research in distance education supports the notion of building networks between diverse stakeholders as a key element in successful projects, thus implicitly supporting the notion of building social capital.

> One lesson learned from successful projects is that new bridges must be built--between rural communities and state government, between development experts and telecommunications experts, between those who use technical jargon and the lay public whose future is being decided. Ultimately, rural development is a community process. There is an old saying, "You can lead a horse to water, but you can't make it drink." State development agencies cannot make rural development happen. Development depends on local leadership, local initiative and local cooperation. (Parker and Hudson 8)

Strength of weak ties underlies notions of deliberative democracy and social capital that flows from an evolving participatory paradigm expansion. For this paradigm expansion to occur at the local level, there needs to be institutional change supporting bottom-up policy. This expansion may be represented by the following model [Figure 5].



*Participatory approaches and methods support local innovation and adaptation, accommodate and augment diversity and complexity, enhance local capabilities, and so are more likely to generate sustainable processes and practices;

*An interactive learning environment encourages participatory attitudes, excites interest and commitment, and so contributes to jointly negotiated cources of action;

*Institutional support encourages the spread between and within institutions of participatory methods, and so gives innovators the freedom to act and share. This includes where a whole organization shifts towards participatory methods and management, and where there are informal and formal linkages between different organisations.

Figure 5. Participation Paradigm Expansion.

Sectors G, E and F represent starting points, but no substantial changes can occur without movement into sectors B, C and D and eventually to a complete paradigm expansion represented by sector A. For example, even when development practitioners have come to embrace participatory approaches as in E they may abandon those goals unless they are supported by their organization, or lacking this, an environment somewhere within their organization that supports an interactive learning environment. Conversely, an interactive learning environment that lacks participatory methodologies or institutional support as in G will also prevent change. Finally, where there is institutional support as in F, it is likely to remain only rhetoric unless it embraces either an interactive learning environment or participatory methodologies (Pretty and Chambers 187-188).

In development communication the notion of participatory communication has been argued implicitly as a way to build social capital (White et al., 1994; Servaes et al., 1996). Participatory communication embraces the notion of deliberative democracy, a reciprocal collaboration between change agents, between change agents and local advisory groups and between change agents, local advisory groups and the community. "Listening to what the others say, respecting the counterpart's attitude, and having mutual trust are all necessary. Participation supporters do not underestimate the ability of the masses to develop themselves and their environment" (Servaes 15).

Participatory communication focuses more on the means rather than on the end. The means is an end in and of itself. Solutions to local problems will follow.

> Participatory communication is more concerned with process and context, on the exchange of "meanings" and on the importance of this process...As a result, the focus moves from a communicator- to a more receiver-centric orientation, with the resultant emphasis on meaning sought and ascribed rather than information transmitted. With this shift in focus, one is no longer attempting to create a need for the information disseminated, but instead, information is disseminated for which there is a need...The emphasis is on information exchange rather than on persuasion, as was the case in the diffusion model. (Servaes 16)

The foil of participatory communication has been diffusion of innovations theory generally attributed to Everett Rogers (1983). "Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers 5, 1983). Those interested in participatory communication are critical of communication research that supports top-down approaches focused on the adoption of innovations developed by experts for the public. While the intentions may be well-meaning, they are attempting to sell solutions to problems that may not be perceived as problems by the beneficiaries. A bottom-up approach promotes

dialogue among beneficiaries and between beneficiaries and institutions in defining problems and developing solutions (Rutger-Jan Schoen 249-250).

In a centralized top-down approach, decisions about when an innovation will be diffused, who will evaluate it, and through what channels are made by a few experts in a change agency. In a decentralized bottom-up approach, community members participate in this decision making process. In a highly decentralized approach, innovations may come from the local knowledge of community members based on practical experience rather than the scientific knowledge of change agents (Rogers 7, 1983).

Rogers himself notes shortcomings in the interpretation and overuse of diffusion theory in centralized approaches for dissemination of information (McQuail, 1994; Rogers and Kincaid, 1981; Rogers, 1995).

> The *pro-innovation bias* is the implication in diffusion research that an innovation should be diffused and adopted by all members of a social system, that it should be diffused more rapidly, and that the innovation should be neither re-invented nor rejected. Seldom is the pro-innovation bias straightforwardly stated in diffusion publications. Rather, the bias is assumed and implied. This lack of recognition of the pro-innovation bias makes it especially troublesome and potentially dangerous in an intellectual sense. (Rogers 100, 1995, emphasis in original)

To bring communication research more into line with bottom-up policy, Rogers and Kincaid propose merging the non-linear convergence model of communication with network analysis. Convergence describes a process of information sharing that is necessary to reach mutual understanding, while network analysis provides a method of observing the movement of information into the community. The addition of network analysis helps to move the notion of convergence from an ideology to an observable phenomena.

A dialogical model of communication is more ideological than theoretical at this time. Advocates of participatory communication do not entirely exclude the information-diffusion model.

> The flow of information within and from outside, and introduction of innovations are necessary aspects of the dialogical model. But its central concern is the dimension of meanings and values of development, the process through which meanings and values are created, shared, and contested within the development system, and of which information is but only one of the components. (Rahim 134).

In other words, dialogical or participatory communication suggests an interactive relationship between sender and receiver. Receivers will more likely tune into a message if they have had some role in developing the message. If so, they will have already integrated the message because it has been developed with in the context of their life experience. This deliberative process produces information that fits with in the social context or each unique community.

A key notion of the deliberative process and the underlying social capital that deliberative democracy depends upon, is the building and movement of shared norms out into the community. In order to build social capital in the community at large, through word-of-mouth via social networks, their needs to be understanding among representatives of stakeholder groups on what problems exist and what solutions might be possible.

The deliberative process is intended to facilitate understanding through dialogue, yet dialogue does not necessarily mean understanding will occur. There are many barriers that prevent authentic communication. This may be gender, class, ethnicity, knowledge base and many other human factors that make it difficult for understanding to occur. The coorientation model of communication developed by Chaffee and McLeod (1973) is helpful in understanding barriers that might prevent shared understandings.

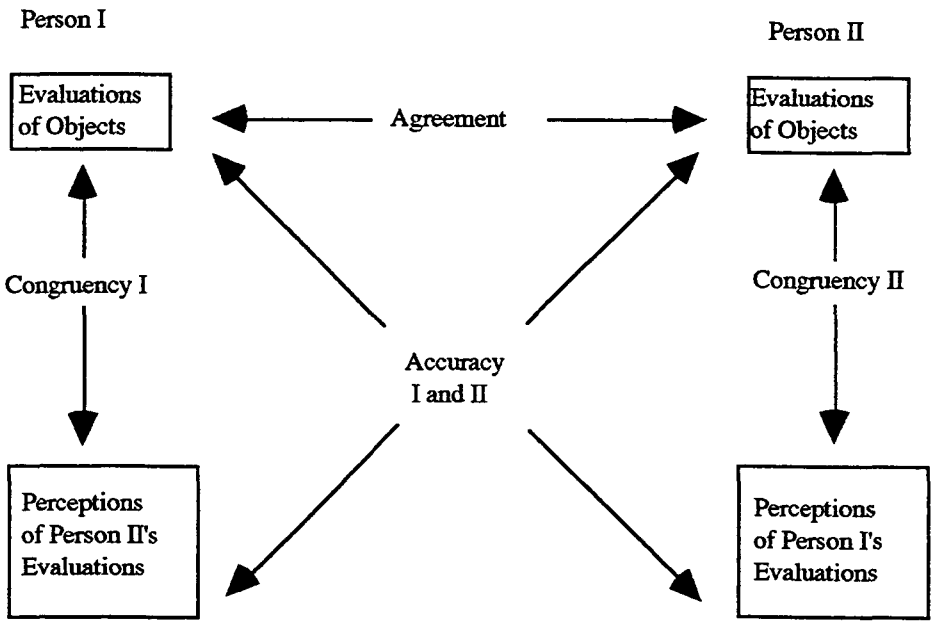


Figure 6. Coorientation Model.

Congruency is the extent to which one person thinks another person agrees or disagrees with them about something. Agreement is the extent to which the way one person thinks about something resembles the way another person thinks about the same thing. Accuracy is the extent to which one person's perception of what another thinks about something resembles what they actually think. "The more two persons coorient by communicating their private values to one another, the more accurate their perceptions of one anothers values should become" (663). The more accuracy and the more communication then the greater the opportunity for understanding (662-664). Understanding of other's perspectives does not necessarily mean cooperation and participation, but without understanding, collective action will be difficult.

If not top-down, what is bottom-up? Is the purpose of bottom-up participation for facilitating centralized transmission of information from the

scientific community to the non-scientific community in order to promote a technology or practice for solving problems--a means to an end? Is the purpose of bottom-up participation for facilitating decentralized transmission of information through dialogue within a community to promote understanding and respect for others' perspectives in order to find common ground and local solutions to problems--an end in itself? Deliberative democracy depends, in part, on a restructured government that encourages strong local involvement in policy issues that ultimately enhance national goals.

This study explores the notion of bottom-up participation as experienced by local change agents in the context of watersheds. Agents link policy to people. They have the enormous challenge of implementing social changes for a new deliberative democracy deemed necessary in a devolutionary time. How they implement the new emphasis on civic renewal through bottom-up participation depends a great deal on dialogue and shared understandings, which in turn, depends on communication. Communication research, with its connection to policy and planning issues, has a corresponding role to play in these devolutionary times.

Notes

[1]Excess nutrients associated with NPS pollution include nitrogen and phosphorous. Nitrogen easily dissolves in water and travels along through a watershed. Phosphorous enters water attached to soil particles eroded from the land. NPS pollution currently accounts for 80 percent of the degradation of water in the United States (Mitchell, 107). Point source (PS) pollution, as opposed to NPS pollution, can be traced to a specific industrial or municipal waste pipe or to a toxic waste site. Substantial reductions in PS pollutants have been achieved over the last 20 years (U. S. Environmental Protection Agency 3).

METHODS

The purpose of the Methods section is to orient my choice of knowing, looking, listening and telling qualitative research. Three sections orient my thesis within qualitative traditions. These include methodology, research approach and method of data collection, analysis and interpretation. The three sections are drawn and synthesized from the perspectives of Denzin (1994), Denzin and Lincoln (1994), Patton (1990) and Glesne and Peshkin (1992).

Methodology

Qualitative methodologies are described as theoretical orientations, traditions, paradigms or perspectives that are concerned with multiple truths or ways of knowing and being. Methodologies include postpositivism, phenomenology, hermeneutics, systems theory, ethnomethodology, feminism(s), Marxism, cultural/orientational studies, constructivism and interpretivism.

Interpretivism/constructivism

My thesis is based on interpretivist/constructivist methodologies rooted in phenomenology and hermeneutics. The phenomenologist's goal is to understand social phenomena by looking at how the world is experienced from the actor's perspective. Human perceptions are the important realities to discover. Hermaneutists share this goal, and add that other researchers with different backgrounds, using different methods, with different purposes will likely develop somewhat different foci, reactions, and scenarios (Patton 57, 69, 84-85).

The interpretivist/constructivist attempts to understand the world of lived experience from the point to view of those who live it. "This goal is variously spoken of as an abiding concern for the life world, for the emic point

of view, for understanding meaning, for grasping the actor's definition of a situation, for *Verstehen*.." (Schwandt 118).

Verstehen is a basic notion of qualitative inquiry. At its most elemental level, verstehen means to understand. Understanding comes from the human ability to develop empathy with people interviewed and observed.

> The capacity for empathy, then, is one of the major assets available for human inquiry into human affairs. The verstehen doctrine asserts that human beings can and must be understood in a manner different from other objects of study because humans have purposes and emotions; they make plans, construct cultures, and hold values that affect behavior. Their feelings and behaviors are influenced by consciousness, deliberation, and the capacity to think about the future. Human beings live in a world that has special meaning to them, and because their behavior has meaning, human actions are intelligible in ways that the behavior of nonhuman objects is not. (Patton 56-57)

There are different perspectives to interpretivist and constructivist approaches. Within interpretivism, perspectives include interpretive anthropology, symbolic interactionism and interpretive interactionism. Within constructivism, perspectives include constructivist philosophy, radical constructivism, social constructionism, feminist standpoint epistemologies, and naturalist inquiry (Schwandt 122-129).

My thesis draws on the interpretivist perspective of interpretive interactionism and the constructivist perspective of naturalistic inquiry. Specifically, I am influenced by the interpretivist work of Denzin (1989) and the constructivist work of Lincoln and Guba (1985).

Denzin's interpretive interactionism methodology is used when there is an interest in the relationship between personal troubles and the public policies and public institutions created to address those personal problems (10).

Denzin applies interpretive interactionism to elicit the perspective of those who are at the receiving end of social programs. Because of implicit

connections between social problems and environmental problems, I found Denzin's work useful for understanding public policy as it relates to natural resource public policy programs. Additionally, while Denzin is primarily concerned with clients of such programs, I believe his approach can be applied in understanding the perspectives of local agents who are asked to carry out such programs. Local agents are also at the receiving end of public policy and their lives, through their work, are subject to the benefits and constraints of implementing new initiatives.

Lincoln and Guba's constructivist approach of naturalistic inquiry is less specifically designed than Denzin's interpretive interactionism, yet their basic beliefs are shared. That is, the basic questions about the nature of reality are to be found locally and the relationship between the inquirer and the knower is interactive and dialectical (Guba and Lincoln, 109, 110-111).

Research Approach

Qualitative research approaches may also be described as strategies or applications. They can include ethnography, field study, grounded theory, biographical method, historical method, human ethology, ethnology, action and applied research, clinical research, case study and evaluation research. My research approach includes process and comparative evaluation because I was interested in how projects were operating internally and how they compared to each other at the local level.

Process evaluation research

Process evaluation research focuses on how something happens rather than on outcomes or results. "Process evaluations are aimed at elucidating and understanding the internal dynamics of how a program, organization, or relationship operates (Patton 94-95).

Comparative evaluation research

Comparative evaluation research compares national programs with a common goal at the local level. Qualitative methods "capture unique diversities and contrasts that emerge as local programs adapt to local needs and circumstances" (Patton 96).

Method of Data Collection, Analysis and Interpretation

These can include: narrative, content and semiotic analysis; visual i.e., film, video and photography; interviews; observation; mute evidence i.e., written texts and cultural artifacts and personal experience. My thesis incorporates data collecting methods of interviewing, observation, mute evidence and personal experience.

Interviewing

Interviewing techniques can be divided into three subsets: informal, semi-structured and standardized. I used a semi-structured interview technique using an interview guide to elicit information from respondents. The interview guide is used to gather common information the researcher would like to know, but order and exact wording of the questions vary from respondent to respondent depending on the situation. This method also allows the researcher the freedom to pursue lines of inquiry that they may not have thought about before entering the field (Patton 280, Fontana and Frey 363, 365).

Purposive sampling

Cases and respondents were chosen using purposive sampling. Unlike random sampling used by positivist researchers to elicit information generalizable to the total population, purposive sampling seeks to search out "information-rich" cases that will shed light on the research questions (Patton 169). There are many forms of purposive sampling. I used maximum variation

sampling and opportunistic sampling to select cases and respondents. Maximum variation sampling is used when there is an interest in program variation and common patterns across programs. Opportunistic sampling takes advantage of new information that emerges in the field (Patton 172, 179).

Analysis and interpretation

Interpretation, or the process of making sense of what has been learned, is at the heart of all qualitative research. Interpretation attempts to throw light on the experience of others, and the interpreter's goal is to show other's experiences as they really are (Denzin 504-505).

The analysis of data is a process of sorting and making sense of other's realities. It "is a multiplicity of complex conceptual structures, many of them superimposed upon or knotted into one another, which are at once strange, irregular, and inexplicit, and which he must contrive somehow first to grasp and then to render." It is "really our own constructions of other people's constructions of what they and their compatriots are up to..." (Geertz 9, 10).

Because qualitative interpretation is the "inquirer's construction of the constructions of the actors one studies" (Schwandt 120) it is impossible to establish the trustworthiness of a study in quantitative terms. Instead, Lincoln and Guba assert that because different paradigms make different knowledge claims, the criteria used for what counts as significant knowledge must vary from paradigm to paradigm.

Within the conventional positivist paradigm, there are four criteria used to determine trustworthiness: internal validity, external validity, reliability and objectivity. These criteria are appropriate for a paradigm based on the notion of one reality. But, for paradigms based on knowledge claims of multiple constructed realities, these same criteria are inappropriate. Therefore,

naturalistic inquiry has its own criteria for determining trustworthiness that parallel positivist criteria of credibility, transferability, dependability and confirmability (Lincoln and Guba 295, 300-301, 327).[1] I have used most of the elements Lincoln and Guba have suggested for establishing trustworthiness in this study.

Comparative pattern analysis

I followed a process of comparative pattern analysis developed by Guba (1978) and outlined by Patton (1990). This process starts by sorting through the data and looking for patterns or "'recurring regularities'" (Patton 403). The patterns can then be sorted into categories, which are then evaluated by two criteria: "'internal homogeneity'" and "'external heterogeneity'" (Patton 403). With internal homogeneity, the researcher is looking for data in a category that clearly merge together. With external heterogeneity, the researcher is looking for data in a category that clearly diverge (Patton 403). This process helps to bring order to data that is exceedingly disordered in its raw form.

The researcher then goes back and forth between the data and criteria to determine if a category is meaningful and accurately defined, and that the data in a category fits or should be placed in another category or a new category developed. Next, a process of determining which categories are more important than others using criteria such as salience, credibility, uniqueness, discovery, feasibility, and relevance to the research question. Finally, the researcher determines whether the categories are plausible, that the data is consistent and presents a whole picture; are complete, that enough data exists to make logical conclusions; are reproducible, that another researcher viewing the data could make similar conclusions; are credible, that the persons who provided the data accept the conclusions (Patton 403-404).

Thick description

In both analysis and interpretation, I have utilized the notion of thick description as elaborated by Clifford Geertz (1973) and implemented by Denzin (1989) and Lincoln and Guba (1985). Thick description goes beyond documenting who did what when. The goal of thick description is to provide enough detailed information that allows readers to form their own understandings and interpretations from the findings (Lincoln and Guba 125). Thick description facilitates for readers a sense that events described are something they too could, or have experienced (Denzin 83-84).

Thick interpretation depends on thick description. Through thick description, thick interpretation uncovers working theories or local knowledge. Local knowledge allows individuals to understand and deal with their lived experiences. Local knowledge may develop through experience, through tradition or through social science theories. Local knowledge may or may not be complete, biased or self serving. The interpretivist/constructivist attempts to develop a more complete knowledge by merging local knowledge with social scientific knowledge (Denzin 109-110).

Fieldwork

Evaluation research process

Process and comparative evaluation using maximum variation sampling was chosen for my research approach and sampling technique because I wanted to compare internal program dynamics and how various programs were implemented at the local level.

I began to attend conferences about watersheds and public involvement during the winter of 1995 and 1996. I wanted to gain a better understanding of

the range of programs. After attending watershed conferences in the state, I discovered most watershed projects were agency led.

I identified 57 agency led watershed projects in the state. I chose to look at 22 projects because they were at least two years into the process and represented different areas of the state and different demographics limited to rural, urban or rural and urban watersheds. Twenty-five agency personnel were drawn from a list of project contact people provided by the state or gathered at conferences. Projects chosen were typically funded for three years although one had been funded for ten years. Funding came primarily from federal and state sources with some matching local funds. Of the 25 contacts, 21 representing 17 watersheds agreed to meet with me.

Along the way, two respondents recommended a particular watershed project doing a good job of involving the public. Here, it could be said that I used opportunistic sampling. This resulted in the addition of two more agency personnel to the list and one more watershed. In the end, I looked at 18 watersheds and interviewed 23 agency personnel. Four respondents were women and 19 were men.

In general, there was one respondent interviewed per watershed project. Exceptions to this were two interview sessions where I interviewed two people from the same agency at one time; in two cases, one respondent was the contact person for two watershed projects; and in four cases, there were two to four respondents working on one watershed project interviewed one-on-one from the same or cooperating agencies.

Respondents represented various agencies. Fifteen were employees of the Natural Resources Conservation Service (NRCS), five were employees of Cooperative Extension Service (CES), one was an employee of the former Soil

Conservation Service (SCS) now NRCS, one was a director of a County Conservation Board (CCB), and one was an employee of the Iowa Department of Natural Resources (IDNR) (See Appendix A).

In all but four instances, I traveled to the respondents' office or home located in or near the watershed they were or had been involved with. Where the interview did not take place in or near the watershed, those four interviews occurred in a regional or state office. Regions of study included one watershed in the northwest, two in northcentral, five in the northeast, four in west central, one in central, one in east central, two in the southwest, and two in the southeast part of the state.

Interviews were conducted between March 27, 1996 and May 31, 1996. Written background information, gathered from conferences or materials sent to me by respondents before the interview, was used to orient me to each project. Respondents usually had more detailed information to offer me at the time of the interview. Interviews were tape recorded and lasted approximately 90 minutes. I took written notes or notes on my laptop. Before conducting interviews, each respondent signed a letter of consent indicating voluntary participation as an individual, not as a representative of an agency (See Appendix B).

Interviews were semi-structured based on an interview guide. Not all questions were asked nor were they asked in the order on the guide. The interview guide changed somewhat overtime as interviews led me to add some questions not on the original guide (See Appendix C).

If the interviews took place near the watershed, I toured the area to get a rough understanding of the landscape. Occasionally, the agent joined me, more often they provided a map. A letter of thanks was written to each respondent.

Community Participation

I began my research by evaluating each watershed initiative in terms of types of public participation employed at various stages of the project. If not top-down, what is bottom-up? The major responsibility of generating bottom-up participation falls on local change agents. The purpose of my study is to discover how agency personnel understand, experience and implement bottom-up participation in the context of watershed management for the purpose of exploring mass communication research that responds to participatory initiatives.

Researchers have noted that the quality of participation is essential to the success of projects and important in sustaining project efforts after funding ends (Arnstein, 1969; Pretty, 1994). "The idea of citizen participation is a little like eating spinach: no one is against it in principle because it is good for you. Participation of the governed in their government is, in theory, the cornerstone of democracy—a revered idea that is vigorously applauded by virtually everyone" (Arnstein 216). But both Arnstein and Pretty note that citizen participation is not commonly understood, embraced or implemented. In fact, citizen participation varies dramatically across similar programs.

Arnstein and Pretty developed very similar typologies to describe levels of citizen participation ranging from ritual to authentic. Ritual participation supports a top-down approach, while authentic participation supports a bottom-up approach.

Arnstein developed her typology to show eight levels of citizen participation in federal urban renewal and anti-poverty programs ranging in degrees from non-participation to token participation to citizen power.

Pretty developed his typology to evaluate the range of participatory approaches used by organizations involved in international programs for sustainable agriculture. The typology shows seven degrees of citizen participation ranging from passive participation to self-mobilization.

Participation is more complex than can be fully described by the typologies. They offer just one way to order what is undoubtedly an unruly phenomenon. However, both typologies offer a starting point from which participation can be discussed. Either typology would have worked for my study, but I chose to work with Pretty's typology because I was more familiar with the literature from which it comes.

I adapted Pretty's typology to include non-farm as well as farm participation as a guide for evaluating levels of participation in selected watershed projects (Table 1). Pretty's original typology implies that ritual participation is negative while authentic participation is positive. I have attempted to make the typology more neutral because I view a balance between the two as positive.

The adapted typology in Table 1 illustrates seven types of participation that fall along a continuum ranging from ritual to authentic. Pretty suggests that an evaluation of participation should include a qualification of this nature because the of the many interpretations of the term "participation" (40).

The typology shown in Table 1 has a number assigned to the various types of participation from one to seven. For example, number "1" indicates "passive participation," or a level of participation marking the ritual end of the participation continuum. Number "7" indicates "self-mobilization," or a level of participation marking the authentic end of the participation continuum. Numbers "2" through "6" fall between the two ends of the continuum.

Table 1. Participation Continuum: From Ritual to Authentic

Typology	Characteristics of Each Type
1. Passive Participation	People participate by receiving information from agencies about what is going to happen or has already happened. It is a unilateral announcement by agencies without public input.
2. Participation in Information Giving	People participate by answering questions posed by researchers using questionnaire surveys or similar approaches. People do not have the opportunity to influence proceedings.
3. Participation by Consultation	People participate by being consulted, and external agents listen to views. This process does not necessarily concede any share in decision-making, and professionals are under no obligation to take on board people's views.
4. Participation for Material Incentives	People participate by providing resources for material incentives. It is very common to see this called participation, yet people have no stake in prolonging activities when the incentives end unless the activity makes economic sense or meets other landowner needs. Cost-sharing may improve prolonged activity because of personal investment.
5. Functional Participation	People participate by forming groups to meet predetermined objectives related to the project. These institutions tend to be dependent on external initiators and facilitators, but many become self-reliant.
6. Interactive Participation	People participate in joint analysis, which leads to action plans and the formation of new local institutions or the strengthening of existing ones. These groups take control over local decisions, thus people have a stake in maintaining initiatives, structures and practices.
7. Self-Mobilization	People participate by taking initiatives independent of external institutions to change systems. They develop contracts with external institutions for resources and technical advice they need, but retain control over how resources are used.

In conjunction with the typology, I used a matrix to show elements of participation occurring at various stages of watershed projects. The matrix was originally developed to evaluate farmer participation in on-farm research for selected projects in developing countries (Kroma et al. 7). For my study, I adapted the matrix to fit a community participation scenario rather than one focused solely on farmer participation (Table 2). The matrix shows four stages of a project including: problem identification, design, implementation and evaluation.

Table 2. Components of the Watershed Project

	Problem Identification	Design	Implementation	Evaluation
Type of participation using adapted Pretty Typology for each component				
Elements of the community involved for each component				
Goals for each component				
Mechanisms used to encourage participation for each component				
Indicators of participation for each component				
Results of participation for each component				

The matrix has five components including: elements of the community involved, goals of the project, mechanisms used to encourage participation, indicators of participation and results of participation. Using information from the components, each stage of the project was then evaluated for the type of participation based on the adapted Pretty typology.

Completed tables are found at the beginning of the Results and Analysis chapter. The tables are not intended to show quantifiable results. Rather, they are presented as thumb-nail sketches designed to show at a glance an approximation of the variety of participation taking place in various stages of selected watershed projects as a way of illustrating a range of participation.

The tables are not a perfect representation of participation because they are more linear than the projects themselves. Feedback was often going on between stages of a project that cannot readily be shown in tabular form. Projects never had definitive beginnings and endings. They are a slice in time.

As I proceeded with my evaluation of watershed projects, it became evident that the typologies would illustrate only a small part of the story about participation from a local agent's perspective. Agent experiences presented a context into which the range of bottom-up participation could be placed. These experiences are explored following the qualitative tables for selected watershed projects.

Notes

[1]Credibility substitutes for internal validity. Instead of inferring a causal relationship between two variables, the naturalist employs a number of alternative techniques: prolonged engagement, persistent observation, triangulation, peer debriefing, negative case analysis, referential adequacy and member checking. Prolonged engagement means spending enough time to

become oriented to the situation, to detect personal and respondent distortions of the data and to build trust. Persistent observation means identifying emergent patterns that are most salient to the issue under study and focusing on these. Triangulation can mean using a number of sources, methods, investigators, and theories. Peer debriefing means entering into a kind of self analysis with an individual who is the investigator's equal and who understands nuances and methods of the investigation. Negative case analysis means the investigator revises her working hypothesis through hindsight as new information is assimilated so that odd cases become integrated. Referential adequacy means raw documentation in either electronic or paper form that can be referred to. Member checking means testing the investigator's reconstructions of the multiple constructed realities with the original constructors i.e. respondents (Lincoln and Guba 295-314).

Transferability substitutes for external validity. Rather than determine generalizability to the population through statistical parameters, the naturalist instead offers working hypotheses within a richly described context. Thick description and purposeful sampling are techniques used to provide a data base that offers enough contextual information for other inquirers to determine whether elements are transferable to another setting or the same setting at another time. (Lincoln and Guba 316).

Dependability and confirmability are interrelated and substitute for reliability and objectivity. Rather than determine the degree of consistency of a measuring instrument within an experiment or quasi-experiment designed to assure objectivity, the naturalist relies on the judgment of the inquiry auditor. In much the same way that a fiscal auditor examines the process by which accounts were kept, the inquiry auditor examines the process by which the

inquiry was conducted to determine dependability. Additionally, and again much like the fiscal auditor who satisfies him or herself that ledger entries can be supported by documents, the inquiry auditor examines data, findings, interpretations and recommendations and attests that the product is internally coherent thus establishing confirmability (316-318).

Finally, the reflexive journal, can provide the inquiry auditor with additional information for establishing confirmability. The reflexive journal is a personal diary kept by the inquirer for noting logistics along the way, catharsis, reflection within the context of one's values and interests, insights into the inquiry and decisions and rationales for queries (Lincoln and Guba 319, 327).

RESULTS AND ANALYSIS: COMMUNITY PARTICIPATION

The purpose of my study is to discover how agency personnel understand, experience and implement bottom-up public participation in the context of watersheds for the purpose of exploring mass communication research that responds to participatory initiatives. In this chapter I explore community participation in three sections. In the first section, I compare selected watersheds as a way of discussing community participation as a continuum ranging from ritual to authentic. In the second section, I explore various phenomena an agent experiences in building community participation. In the third section, I explore the notion of trust, a foundation for creating shared social norms through diverse social networks.

Originally, as I headed out to talk to agents, I was anxious to evaluate watershed projects in terms of the types of participation employed based on the participatory continuum developed by Pretty. But I was also interested in learning from agents' experiences so that I, as a communication practitioner, might better understand the challenges of bottom-up participation. I found agent perspectives helpful by providing a context for which the notion of bottom-up participation can be discussed.

Names of watersheds selected to illustrate participation as a continuum are real. Respondents in the sections on building community participation and trust represent 15 of the 23 agents interviewed. They may or may not be associated with any of the selected watersheds illustrated in the section on participation as a continuum.

To guarantee respondent anonymity and to protect working relationships, especially between agents, all respondent names have been changed and they are not connected to specific watersheds. Instead, I describe a collage of

understandings, experiences and implementation strategies of bottom-up participation as shared by agents. When woven together, individual stories present a broad story about community participation.

Community Participation: Participation Continuum

A focus of this thesis has been to discover how bottom-up participation is expressed among various watershed projects. To illustrate, this section covers nine selected watershed projects representing a range of public participation observed in the 18 watershed projects of this study.

Agents brought the public into the process to varying degrees. Three projects fell more towards the ritual end of the continuum. They involved agencies and perhaps outside consultants in the problem identification stage, and informed the public of the problem. In two cases, Union Grove Lake and Kent Park Lake, the public was brought into the process through regulation coupled with incentives, or condemnation coupled with incentives. The cases did not have community groups involved in authentic participation early on in the project. They tended to become more participatory towards the end of the project.

One of the three cases falling closer to the ritual end of the participation continuum, Prairie Rose Lake, is the oldest watershed project looked at in this study, beginning in the early 1980s. It shows, perhaps, earlier notions of citizen participation. Projects falling in the middle of the continuum, Fairfield Lakes, Beeds Lake and Three Mile Lake involved community groups early on, particularly in the problem identification stage, and began to include elements of authentic participation. Projects falling closer to the authentic end of the continuum, Flint Creek, Clear Lake and Storm Lake, had community groups engaged in more authentic levels of participation in all stages of the project.

Of the 18 watershed projects looked at in this study, three cases, Kent Park Lake (Table 3), Prairie Rose Lake (Table 4) and Union Grove Lake (Table 5), fell more towards the ritual end of the continuum. Twelve of the 18 projects fell more towards the middle of the continuum and are similar in levels of participation to Fairfield Lakes (Table 6), Beeds Lake (Table 7) and Three Mile Lake (Table 8). Three of the 18 projects fell more towards the authentic end of the continuum and are represented by Flint Creek (Table 9), Clear Lake (Table 10) and Storm Lake (Table 11). Therefore, two thirds of the 18 watershed projects in this study fell more towards the middle of the participation continuum.

Projects involving citizen groups were made up primarily of men, with a few women involved in each group. Citizen groups came from publics that had identified a problem, expressed concern to agencies and asked to be involved, or they were recruited by participants or by agents in order to include groups deemed necessary for diverse perspectives or because they were known by agents or existing citizen groups to have expressed concern about a body of water and had not yet asked to be involved.

Following is an explanation on how to read the tables, an abstract of each watershed and the watershed tables themselves. The tables have been arranged to illustrate participation as a continuum starting with projects falling more towards the ritual end of participation on through to those falling more towards the authentic end of participation. I considered those with higher numbers and, in particular, higher numbers earlier on in the process as projects with more authentic participation taking place. Diversity of citizen groups was also taken into consideration.

It should be emphasized that participation is more complex than can be fully described by the matrix or the Pretty typology. The tables are not intended

to show quantifiable results. Rather, they are presented a thumb-nail sketches designed to show at a glance an approximation of the variety of participation taking place in various stages of selected watershed projects. The tables do not show feedback that might be occurring between stages of projects, which always lacked definitive beginnings or endings.

I determined the type of participation, in terms of the adapted Pretty typology (Table 1) that occurred for the various stages of a watershed project, by asking questions that helped me fill in the cells of Table 2. For example, I asked how the problem with the body of water had been brought to the agent's attention, who had been a part of defining the problem, what were the agency's goals for soliciting participation, what had they done to encourage participation, how did they know they had gotten participation and what were the results of that participation. Agents were not shown the typologies during the interviews because I did not want to influence their answers.

The type of participation based on the criteria from the adapted Pretty typology (Table 1) was then placed into the top cells of each component of Tables 3-11. For example, in Table 3, the problem was identified by agency personnel without citizen involvement, so "1. Passive participation" was placed in the top cell of the column labeled "Problem Identification." In many cases, more than one type of participation was going on, so more than one kind of participation may appear in the top cells.

The rest of the cells in Tables 3-11 indicate what agents told me about participation in their project. Most entries are self-explanatory. However, it should be noted that the entry of "Agencies" typically means NRCS, Farm Service Agency (FSA), CES and IDNR.

The following are abstracts for each of the nine qualitative tables that follow. The abstracts are intended to give a brief overview of each watershed. The acreage of each watershed is rounded to the nearest 1,000 and the city populations are rounded to the nearest 100.

Table 3 Abstract: Kent Park Lake has a 1,000 acre watershed contained within one county. A county park is associated with the lake. Two cities totaling 71,800 lie outside of the watershed, but use the park extensively. Most of its land-use is devoted to row crops, mostly corn and soybeans with some cattle grazing. The director of the county conservation board determined that excessive siltation was threatening recreation activities at the park. A study had been conducted by university researchers to determine the amounts and sources of siltation. It was determined that siltation was coming from eroding farmland in the watershed.

The board developed a watershed plan that included dredging, changing farming practices and constructing erosion controls. The board applied for new state funding and proceeded to gain voluntary support of land owners. Voluntary participation was proceeding, but one key land owner would not allow an easement that would allow the county to temporarily back water up onto his property. Funding was threatened without this land owner's cooperation, so the board utilized condemnation procedures and in court won the right to purchase the needed land.

This project weighs more heavily towards the ritual end of the participation continuum because there was no effort to promote dialogue with the public at large at the problem identification stage. Funding was sought before public input. Public participation was passive because they were told what was going to happen. After being informed of the project, participation by

farmers was sought at the design stage to the extent of determining interest and practices. Agents developed solutions. Participation by farmers at the implementation stage involved a continuation of generating interest and obtaining voluntary participation through the use of incentives. Participation moved towards the authentic end of the participation continuum at the evaluation stage. Here, selected farmers acted as rural ambassadors during urban farm tours as a way of educating urban residents about farming and water quality issues. Farmer participation became functional at this stage.

The project began in 1989. State and federal funding sources included REAP Water Protection and EPA 319 (See Appendix D).

Table 4 Abstract: Prairie Rose Lake is a man-made lake with a 5,000 acre watershed contained within one county. Most of the watershed is agricultural with corn and soybean rotations and some cattle, hogs and pasture. A state park is associated with the lake. Erosion from farm fields had caused parts of the lake to fill with sediment. High levels of phosphorous caused algae blooms in the warmer months. Recreational activities including swimming, boating and fishing were declining because of poor water quality and shallow depths.

Agencies and research institutions were involved in the problem identification stage. Farmer's were informed of the problem identified by agents. At the design stage, their interest was determined before applying for funding. The project would not have been pursued without farmer interest. Farmers voluntarily adopted practices through the use of incentives. Farmers were involved in evaluation to the extent of providing evidence that they had met certain criteria for purposes of receiving incentive payments.

The project began in 1980. Federal funding came from the Rural Clean Water Project.

Table 5 Abstract: Union Grove Lake is a man-made lake with a 7,000 acre watershed contained within one county. There is a small incorporated village on the lake along with a state park. Most of the land is devoted to corn and soybean rotations with some cattle and pasture. Water quality problems were identified by the state conservation agency. Siltation had reached a point where fishing and recreation were no longer desirable.

To address the problem, the state invested significant capital to dredge the lake. To assure that further siltation would not reoccur, the state took regulatory action against land owners using state laws. The court ruled that land owners had to reduce soil loss to a certain acceptable level and ordered the SCS (now NRCS) to both encourage farmers to voluntarily participate in water quality improvement practices or face mandatory regulation, and to provide documentation to the state.

The public was not involved in identifying the problem. Funding was sought after the public was informed of the problem at the design stage. Here, farmers were asked to voluntarily provide information to agencies through the use of surveys to determine existing farming practices and attitudes. The project moved more towards authentic participation at the implementation stage when schools and 4-H clubs were involved in well-water testing projects and a service organization worked on closing abandoned wells. Participation moved back towards the ritual end of participation at the evaluation stage where farmers participated by providing information to agents only.

The project began in 1990. State and federal funding sources included Iowa Publicly Owned Lakes Program, Hydrologic Unit Area and Water Quality Incentive Projects.

Table 6 Abstract: Fairfield Lakes are three man-made lakes with a combined 2000 acre watershed contained within one county. The lakes provide water to a city of 9800, several smaller towns and a number of rural residents. The lakes are also used by local residents for fishing and boating. The city parks associated with the lakes are used for hiking and picnicking. The municipalities are not in the watershed.

The watershed is primarily agricultural with 75 percent of the land in row crops mostly corn and soybeans and the rest in pasture and hay. There is some beef and dairy production. There are two golf courses. The water treatment plant was experiencing problems controlling odor and taste. High sedimentation and excessive nutrients and pesticides were also impacting the treatment plant's ability to provide quality drinking water. Construction of terraces and an agricultural waste system were the main focus for the watershed project.

This project marks a beginning of public involvement in problem identification. Public involvement at this stage included citizens from the community serving as board members of the water municipality. While their participation came about as part of their institutional mandate, the board members along with agencies, SWCD board members and consultants participated in joint analysis and developed strategies to remedy the problem. The project moved back towards the ritual end of participation at the design stage. Here, farmers were involved by providing information to agencies through the use of surveys to determine existing farming practices and attitudes. Participation at the implementation stage moved towards the middle of the participation continuum as more community groups were involved in raising community awareness. Participation moved towards the authentic end of the

continuum at the evaluation stage as selected farmers hosted community events at their farms to share information with farmers and their families about conservation practices they had implemented. Their functional participation was still dependent on agency initiative.

The project began in 1993. State funding included REAP Water Protection.

Table 7 Abstract: Beeds Lake is a man-made lake with a 19,000 acre watershed contained within one county. A state park is associated with the lake. One small town of 500 is inside the watershed with two sewage lagoons, but most of the land-use is in row crops primarily corn and soybeans. There is a small amount of pasture and hay. Six large confinements and feedlots are in the watershed including one large hog confinement and one large cattle feedlot in the priority areas. Algae blooms and siltation of the lake were the most obvious signs of a problem. Excess nutrients and pesticides were also identified. Boating, fishing and swimming were becoming adversely affected. A town of 4,000 is very near the lake, but just outside of the watershed. Townspeople here utilize the lake quite heavily and benefit from outside revenues brought into their community from recreationers using the park and lake complex.

This project marks the beginning of diverse community participation at the problem identification stage. Ritual participation is balanced by more authentic participation at all stages of the project. A non-profit organization, made up of diverse stakeholders, was formed as a way of extending efforts beyond the end of funding. While funding lasts their participation remains functional, but may move towards self-mobilization after funding ends.

The project was began in 1994. State and federal funding sources included REAP Water Protection, Water Quality Incentive Projects and EPA 319.

Table 8 Abstract: Three Mile Lake is a newly constructed lake with a 23,000 acre watershed contained within two counties. A nearby town of 7,900 uses the area for recreation, but is outside of the watershed. The watershed is primarily agricultural with one-third in cattle and pasture, a small amount of hog production and the balance in corn and soybeans. The lake is a used for a multi-county rural water supply, flood control, recreation and wildlife habitat. Flood and erosion control structures were put into place before the lake was built.

Past experience of siltation and excessive nutrient loading of other man-made and natural lakes led agencies to take a proactive approach to preventing problems before they occurred. The project has developed over time with many of the flood and erosion control structures in place by 1978. Renewed plans for the lake were completed in 1989 in response to two consecutive drought years that led to increased public awareness. Efforts to encourage on-farm conservation services, practices and structures began in 1991.

A non-profit agency was formed from state and local agencies, two SWCDs, one city municipality, two boards of supervisors, one county conservation board and a water supply cooperative. Under state code, the non-profit agency has greater local authority than individual member entities. While participation at the problem identification stage came about through agency and institutional mandates, citizen board members increased the diversity of perspectives. The project was flexible enough to increase community participation at the design and evaluation stage as community interest widened. Interactive participation was strong between agencies and stakeholder groups as information was processed by the group to understand the problem and to find solutions. Citizen ambassadors to the community at large

moved from functional participation to interactive participation as information was processed and messages were jointly developed between agents and citizens.

State and federal funding included Iowa Publicly Owned Lakes Program, REAP Water Protection, Water Quality Incentive Projects, Hydrologic Unit Area and EPA 319.

Table 9 Abstract: Flint Creek has a 145,000 acre watershed contained within one county. Three cities with a total population of 30,700 are in the watershed. More than 50 percent of the watershed's land use is agriculture. Row crops, primarily corn and soybeans, are predominate with some pasture, hay and small grain production. Cattle outnumber hog production. A county park straddles the creek and has long been used for environmental education. Stream wading has been a favorite activity, but high levels of coliform bacteria have exceeded safe swimming limitations. Signs warning of unsafe swimming have had to be posted and public notices and news articles have informed the public.

A 15 member advisory group made up of commodity groups, a farm organization, conservation organizations, boards of supervisors, city sanitarians and citizens at large was formed to participate in the problem identification stage. The advisory group utilize a growing data-base developed by teachers and students from local high schools who monitor water quality and develop land use maps. These activities have been incorporated into the school's curriculum. The advisory group is divided up into sub-committees to address various goals of the group. This project is one of two that actively pursued an interactive educational process between citizen monitors, the advisory group and agency personnel at all stages of the project. The project had not yet applied for state or federal funding, but local funding began in 1994.

Table 10 Abstract: Clear Lake is a natural lake with an 8,000 acre watershed contained within one county. A small portion of the watershed's land use is agricultural with corn and soybean rotations dominating. Most of the watershed is urban. Two cities totaling 8,800 account for much of the watershed's land use. A state park is associated with the lake. High levels of phosphorous cause algae blooms in the warmer months affecting recreational activities including swimming, boating and fishing.

Local residents formed a lake association to address water quality problems before funding was sought. Many groups were involved at the problem identification stage and continued to involve other local groups, clubs and agencies to form a very diverse coalition. The coalition is divided up into sub-committees to address various goals of the group. Interactive participation includes informal surveys of urban attitudes conducted by students, citizen monitoring enhancing university and community college research associated with the lake's water quality. An ongoing educational process between agencies, stakeholders and the community at large. This project has also produced its own video about the lake and its citizens moving the project towards self-mobilization at the implementation stage.

The project began in 1995. State and federal funding sources included REAP Water Protection, Water Quality Incentive Projects and EPA 319.

Table 11 Abstract: Storm Lake is a natural lake with an 11,000 acre watershed contained within one county. Several city parks are located around the lake. A city of 8,800 is in the watershed, with a sewage treatment plant located outside of the watershed. Older and newer septic systems exist around the lake. There are two golf courses within the watershed. The predominant land use in the watershed is agriculture. These include row crops, primarily

corn and soybeans, with some pasture, hay and small grain production. Hog production surpasses all other livestock production. Siltation and algae blooms were the most visible problems with the lake, which were impacting the quality of fishing, boating and swimming.

Local residents formed a lake association to address water quality problems. Two universities have provided researchers and students to build a data-base chronicling land use, biological systems, geophysical and hydrological systems and socio-economic information. This information is shared with the lake association. Agents are members of the association but do not explicitly direct efforts. Efforts between the association and agencies are both cooperative and independent of each other thus moving the group toward self-mobilization. Both work cooperatively with other community groups.

The lake association initiatives are aimed at raising community awareness through events such as a raffle for mulching mowers at a community bank. Students have helped plant shrubs and trees for streambank stabilization. Local citizens, schools and a service club have participated in civic activities such as storm drain stenciling, toxics waste clean-up, leaf pick-up and composting.

This project is similar to Clear Lake in terms of the level of community initiatives and interactive involvement with agencies, yet it lacks the diversity of the Clear Lake project. If diversity, of stakeholder groups is more heavily weighed, then Clear Lake would be closer to the authentic end of the participation continuum than Storm Lake.

The project began in 1994. State and federal funding sources included Iowa Publicly Owned Lakes Program, REAP Water Protection and Water Quality Incentive Projects.

Table 3: Components of the Watershed Project: Kent Park Lake

	Problem Identification	Design	Implementation	Evaluation
Type of participation based on the adapted Pretty typology for each component	1. Passive participation	1. Passive participation 3. Participation by consultation	3. Participation by consultation 4. Participation for material incentives	1. Passive Participation 3. Participation by consultation 5. Functional participation
Elements of the community involved for each component	• Co. conservation • Consultants	• Co. conservation • Agency • SWCD • Farmers	• Agencies • SWCD • Farmers	• Agency • SWCD • Farmers • Non-farm
Goals for each component	• Determine sedimentation amount and sources	• Determine farming practices and attitudes	• Technology transfer	• Maintain funding • Keep farmers on track • Determine if farmers fulfilling contract • Community education
Mechanisms used to encourage participation for each component		• Interpersonal communication	• Interpersonal communication • Voluntary • Incentives • Condemnation procedures	• Interpersonal communication • Mass communication • Funding requirement • Urban farm tour
Indicators of participation for each component			• Farm sign-up for conservation assistance	• Farm contracts met • Farm tour attendance
Results of participation for each component	• Sedimentation data	• Determine interest in participation	• Condemnation • Conservation structures in progress	• Conservation structures in place • < sedimentation • Community interest in conservation practices

Table 4. Components of the Watershed Project: Prairie Rose Lake

	Problem Identification	Design	Implementation	Evaluation
Type of participation based on the adapted Pretty typology for each component	1. Passive participation	1. Passive participation 3. Participation by consultation	3. Participation by consultation 4. Participation for material incentives	1. Passive participation 3. Participation by consultation
Elements of the community involved for each component	• Agencies • Research institution	• Agencies • SWCD • Board of supervisors • Farmers • Non-farm	• Agencies • SWCD • Board of supervisors • Farmers	• Agencies • SWCD • Board of supervisors • Research institution • Farmers • Non-farm
Goals for each component	• Determine kinds and amount of erosion • Determine water quality	• Acquire funding • Develop conservation plans and consulting services • Obtain farmer interest • Community education	• Technology transfer	• Maintain funding • Keep farmers on track • Determine if farmers fulfilling contract • Determine change in sedimentation and nutrient loading • Community education • Research papers & presentations
Mechanisms used to encourage participation for each component	• Agency mandate	• Mass communication • Public meetings • Voluntary	• Interpersonal communication • Voluntary • Incentives	• Mass communication • Interpersonal communication • Research traditions • Funding requirement
Indicators of participation for each component	• Data-base of physical indicators begun	• Public meeting attendance • Grants submitted	• Farm sign-up for conservation assistance	• Farm contracts met
Results of participation for each component	• Base-line data collected	• Funding received	• Conservation practices & structures in progress.	• Conservation practices & structures in place. • Funding reports filed • Data-base of physical indicators proceeding • < sedimentation

Table 5. Components of the Watershed Project: Union Grove Lake

	Problem Identification	Design	Implementation	Evaluation
Type of participation based on the adapted Pretty typology for each component	1. Passive participation	1. Passive participation 2. Participation in information giving 3. Participation by consultation	3. Participation by consultation 4. Participation for material incentives 5. Functional participation	1. Passive participation 3. Participation by consultation
Elements of the community involved for each component	• Agency (IADNR)	• Agencies • SWCD • Farmers • Non-farm	• Agencies • SWCD • Farmers • Crop scouting services • Service group • Secondary Schools • 4-H	• Agencies • SWCD • Farmers • Non-farm
Goals of participation for each component	• Take legal action against landowners	• Determine farming practices and attitudes • Acquire funding • Develop conservation plans	• Technology transfer • Community education	• Maintain funding • Keep farmers on track • Determine if farmers fulfilling contract • Determine change in sedimentation and nutrient loading • Provide information to state regulatory agency • Community education
Mechanisms used to encourage participation for each component	• Agency mandate • State laws	• Interpersonal communication • Mass communication • Voluntary • Public meetings • Threat of regulation	• Interpersonal communication • Mass communication • Voluntary • Incentives • Threat of regulation	• Interpersonal communication • Mass communication • Funding requirement • State laws • Threat of regulation
Indicators of participation for each component	• Suit against landowners	• Surveys returned • Public meeting attendance • Grants submitted	• Farm sign-up for conservation assistance • Civic activity • Educational activity	• More crop scouting services • Farm contracts met
Results of participation for each component	• Court ruling	• Agencies assigned roles for assisting farmers with new practices, structures and services • Funding received	• Conservation practices and structures in progress • Wells closed • Wells tested	• Conservation practices and structures in place • Reports filed • < Sedimentation • < nutrients

Table 6: Components of the Watershed Project: Fairfield Lakes

	Problem Identification	Design	Implementation	Evaluation
Type of participation based on the adapted Pretty typology for each component	6. Interactive participation	2. Participation in information giving	1. Passive participation 3. Participation by consultation 4. Participation for material incentives	1. Passive participation 3. Participation by consultation 5. Functional participation
Elements of the community involved for each component	• City water board • Agencies • SWCD • Consultants	• Agencies • SWCD • City water board • Co. Board of Supers • Farmers	• Agencies • SWCD • Farmers • Non-farm • Conservation group • Implement dealer • Chemical dealer	• Agencies • SWCD • Farmers • Non-farm
Goals for each component	• Water quality testing for sediment, nutrients and pesticides	• Obtain funding • Design structural practices • Determine farming practices and attitudes	• Community education	• Community education • Farmer to farmer information exchange • maintain funding • Keep farmers on track • Determine if farmers fulfilling contract
Mechanisms used to encourage participation for each component	• Municipality and agency mandates	• Interpersonal communication • Voluntary	• Interpersonal communication • Mass communication • Public meetings • Voluntary • Incentives	• Interpersonal communication • Mass communication • Funding requirement
Indicators of participation for each component		• Survey return	• Public meeting attendance • Farm sign-up for conservation assistance	• Funding reports filed • Attendance at demonstration plots
Results of participation for each component	• Water quality determined	• Funding received • Structures needed determined	• Conservation structures in progress	• Conservation structures in place • Siltation reduced • Livestock waste contained • New funding applied for

Table 7: Components of the Watershed Project: Beeds Lake

	Problem Identification	Design	Implementation	Evaluation
Type of participation based on the adapted Pretty typology for each component	2. Participation in information giving 3. Participation by consultation 5. Functional participation	1. Passive participation 3. Participation by consultation 5. Functional participation	3. Participation by consultation 4. Participation for material incentives 5. Functional participation	1. Passive participation 3. Participation by consultation 5. Functional participation
Elements of the community involved for each component	• Agencies • SWCD • Co. Conservation • Board of supers • Co. sanitarian • Service clubs • Wildlife clubs • Hunting/fishing club • Agribusiness • Chamber of commerce • Co. Historical society	• Agencies • SWCD • Non-profit • Farmers • Non-farm	• Agencies • SWCD • Non-profit • Secondary schools • Youth groups • Farmers • Non-farm	• Agencies • SWCD • Non-profit • Farmers • Non farmers
Goals for each component	• Survey general public • Review existing water quality data • Discuss needs • Form non-profit from participating groups	• Assess farmer needs • Develop conservation plans • Acquire funding • Community education	• Community education • Stream bank restoration • Technology transfer	• Maintain funding • Water monitoring • Keep farmers on track • Determine if farmers fulfilling contract • Farmer to farmer information exchange • Community education
Mechanisms used to encourage participation for each component	• Interpersonal communication • Mass communication • Voluntary • Agency mandates	• Interpersonal communication • Mass communication • Voluntary • Public meetings	• Interpersonal communication • Mass communication • Voluntary • Public meetings	• Interpersonal communication • Mass communication • Networking • Funding requirement
Indicators of participation for each component	• Citizen group participation	• Non-profit participation • Public meeting attendance • Grants submitted	• Non-profit participation • Public meeting attendance • Farm sign-up for conservation assistance	• Farm contracts met • Non-profit participation • Farmer to farmer meeting attendance • Urban farm tour attendance • Demonstration plot attendance • Field day attendance
Results of participation for each component	• Non-profit formed	• Funding received	• Conservation structures and practices in progress	• Conservation structures and practices in place • Funding reports filed • Water quality data-base evolving

Table 8: Components of the Watershed Project: Three Mile Lake

	Problem Identification	Design	Implementation	Evaluation
Type of participation based on the adapted Pretty typology for each component	1. Passive participation 3. Participation by consultation 6. Interactive participation	1. Passive participation 2. Participation in information giving 3. Participation by consultation 6. Interactive participation	1. Passive participation 3. Participation by consultation 4. Participation for material incentives	1. Passive participation 2. Participation in information giving 3. Participation by consultation 6. Interactive participation
Elements of the community involved for each component	• Agencies • SWCD • Boards of supervisors • Municipality • Co. conservation • Water supply cooperative • Public	• Non-profit agency (includes all from problem ID "Elements" with public representation through various board members • Advisory group farmers, non-farm	• Non-profit agency • Farmers • Non-farm	• Non-profit agency • Advisory group • Researchers • Farmers • Livestock assn. • Non-farm
Goals for each component	• Determine needs: erosion control water supply, flood control and recreation • Community education	• Determine land acquisition • Determine farming practices and attitudes • Develop conservation plans • Acquire funding • Community education	• Community education • Land acquisition • Avoidance of condemnation • Technology transfer	• Community education • Farmer to farmer information exchange • Maintain funding • Determine change in farming practices and attitudes • Keep farmers on track • Determine if farmers fulfilling contract • Participation level • Determine biotic indicators
Mechanisms used to encourage participation for each component	• Agency and municipality mandates	• Interpersonal communication • Mass communication • Voluntary	• Interpersonal communication • Mass communication • Voluntary • Incentives	• Interpersonal communication • Mass communication • Voluntary • Funding requirement • Research traditions
Indicators of participation for each component	• Cooperation towards forming a non-profit agency under state code that gives greater authority than individual entities.	• Public meeting attendance • Surveys returned • Grants submitted	• Farm sign-up for conservation assistance	• Surveys returned • Data-base of biotic indicators proceeding • Farmer to farmer meeting attendance • Urban farm tour attendance • Field day attendance
Results of participation for each component	• Non profit agency formed	• Funding received • Farmer practices and attitudes determined	• Conservation practices and structures in progress • Condemnation of one property	• Conservation practices and structures in place • Funding reports filed • Environmental data-base evolving

Table 9: Components of the Watershed Project: Flint Creek

	Problem Identification	Design	Implementation	Evaluation
Type of participation based on the adapted Pretty typology for each component	1. Passive participation 3. Participation by consultation 5. Functional participation 6. Interactive participation	5. Functional participation 6. Interactive participation	1. Passive participation 3. Participation by consultation 4. Participation for material incentives 5. Functional participation 6. Interactive participation	1. Passive participation 3. Participation by consultation 6. Interactive participation
Elements of the community involved for each component	• Co. conservation • Secondary education: teachers-students • Advisory board • Public	• Co. conservation • Agencies • SWCD • Advisory board	• Co. conservation • Agencies • SWCD • Advisory board • Teachers/students • Farmers	• Co. conservation • Agencies • SWCD • Advisory board • Teachers/students • Farmers • Non-farm
Goals for each component	• Gather baseline data • Identify problem areas • Advisory education • Student education • Community education	• Funding • Develop mission statement, goals and plan of action	• Community education • Work with landowners in problem areas	• Community education • Co. conservation & advisory group education • Keep farmers on track • Determine if farmers fulfilling contract
Mechanisms used to encourage participation for each component	• Interpersonal communication • Voluntary • Mass communication • Water testing/land use built into the school curriculum	• Interpersonal communication • Voluntary	• Interpersonal communication • Mass communication • Voluntary • Incentives	• Interpersonal communication • Mass communication • Voluntary • Water quality & land use evaluation built into the school curriculum
Indicators of participation for each component	• Data-base is growing • Advisory board attendance	• Increased trust • Grants submitted • Local funding acquired • Advisory board attendance	• Farm sign-up for conservation assistance • School activity	• Farm contracts met • Local authorities accept reliability of teacher/student data-base and evaluation • Advisory board attendance
Results of participation for each component	• Greater understanding among participants about water quality issues	• A plan of action based on multiple rationality • Funding received	• Conservation structures in progress	• Conservation structures in place • Advisory board and Co. conservation perceptions of problem changing • Revised strategies of advisory group based on increased knowledge of problems • Interest in developing an urban component to the watershed project

Table 10: Components of the Watershed Project: Clear Lake

	Problem Identification	Design	Implementation	Evaluation
Type of participation based on the adapted Pretty typology for each component	2. Participation in information giving 5. Functional participation 6. Interactive participation	6. Interactive participation	1. Passive participation 3. Participation by consultation 4. Participation for material incentives 6. Interactive participation 7. Self-mobilization	1. Passive participation 3. Participation by consultation 6. Interactive participation
Elements of the community involved for each component	• Agencies: • 2-SWCD • Lake Association • Community leaders • Sporting clubs • Co. Sanitarian • Health department • Higher education: researchers-students • Non-farm public	• Agencies • 2-SWCD • Lake Association • Community leaders • Sporting clubs • Co. Sanitarian • Health department • Farmers	• Coalition: Agencies 2-SWCD City governments Lake Association School districts Chamber of comm. Co. conservation Conservation orgs. Sporting clubs Lawn care assn. FFA Farm organization	• Coalition • Higher Education • Public
Goals for each component	• Gather physical baseline data • Informal urban practices survey • Identify problem areas • Research & education	• Develop plan of action • Acquire funding • Incorporate research into plan of action	• Community education • Technology transfer	• Community education • Research and education • Maintain funding • Determine if coalition goals met • Keep farmers on track • Determine if farmers fulfilling contract • Determine if non-farm meeting informal contract requirements • Maintain data-base
Mechanisms used to encourage participation for each component	• Interpersonal communication • Voluntary • Research-education opportunities	• Interpersonal communication • Voluntary • Research-education opportunities	• Interpersonal communication • Mass communication • Voluntary • Incentives	• Interpersonal communication • Mass communication • Voluntary • Funding requirement • Educational goals
Indicators of participation for each component	• Data-base is growing	• Coalition forming • Grants submitted • Local funding acquired	• Civic initiatives • School activities • Non-farm "contract " to adopt new practices • Farm sign-up for conservation assistance	• Non-farm participation • Farm contracts met • Coalition participation

Table 10. continued

Results of participation for each component	• Greater understanding among participants about water quality issues • Local level accepts reliability of citizen & researcher-student data	• A plan of action based on increased knowledge base • Funding received • Coalition formed	• Storm drain stencil • Lawn soil testing • Non-farm word to adopt new practices • Conservation structures and practices in progress • Video in production	• Conservation structures and practices in place • Funding reports filed • Data-base developing • Revised strategies of coalition based on increased knowledge of problems • Additional funding sought • Research reports

Table 11. Components of the Watershed Project: Storm Lake

	Problem Identification	Design	Implementation	Evaluation
Type of participation based on the adapted Pretty typology for each component	2. Participation in information giving 5. Functional participation 6. Interactive participation 7. Self-mobilization	5. Functional participation 6. Interactive participation 7. Self-mobilization	1. Passive participation 3. Participation by consultation 4. Participation for material incentives 5. Functional participation 6. Interactive participation 7. Self-mobilization	1. Passive participation 2. Participation in information giving 3. Participation by consultation 6. Interactive participation
Elements of the community involved for each component	• Agencies • SWCD • Lake association • Conservation groups • Higher education: researchers-students • Farm and non-farm public	• Agencies • SWCD • Lake association • Conservation groups • Higher education	• Agencies • SWCD • Lake association • Researchers-students • Farm and non-farm public • Co. conservation • Conservation clubs • Service group • Chamber of commerce • Primary/secondary • Lawn service • Sanitary service • Garden club	• Agencies • SWCD • Lake association • Researchers-students • Farm and non-farm public
Goals for each component	• Gather physical and sociological baseline data • Identify problem areas • Research & education	• Acquire funding • Develop plan of action • Incorporate research into plan of action	• Community education • Research • Technology transfer	• Community education • Research and education • Farmer to farmer information exchange • Maintain funding • Keep farmers on track • Determine if farmers fulfilling contract • Gather more physical and sociological data Determine physical and sociological changes
Mechanisms used to encourage participation for each component	• Voluntary • Research-education opportunities	• Voluntary • Research-education opportunities	• Interpersonal communication • Mass communication • Voluntary • Incentives	• Interpersonal communication • Mass communication • Voluntary • Funding requirement • Research-education traditions
Indicators of participation for each component	• Data-base is growing	• Grants submitted • Local funding initiatives	• Farm sign-up for conservation assistance & on-farm research • Civic infinitives • School activities	• Farm contracts met • Data-base is growing • Attendance at demonstration plots

Table 11. continued

Results of participation for each component	• Greater understanding among participants about water quality issues • Local level accepts reliability of researcher-student data-base and evaluation	• A plan of action based on increased knowledge base • Funding received	• Conservation structures and practices in progress • On-farm research • Storm drain stencil • Leaf pick-up • Toxics clean-up • Composting	• Conservation structures and practices in place • Funding reports filed • Revised strategies of citizen group based on increased knowledge of problems • Additional funding sought • Research reports

Community Participation: Building Local Partnerships

As the opening quote of this chapter illustrates, bottom-up participation is expected, but it is also something we are not used to doing. Bottom-up participation through local partnerships is a notion spoken of frequently among practitioners in natural resource management these days, but a consensus on what the term means does not exist among agents. While the notion is straight forward, understandings, experiences and implementation approaches varied among agents.

Building diverse community watershed partnerships begins with an agent's philosophical outlook, their training, their comfort level with the process, and is limited by existing community awareness and involvement as well as funding, institutional support and time constraints. Participation is also affected by factors not always within the control of the agent. Synchronicity, or a seeming coincidence of events and people converging in the right place at the right time also plays an important role. There were elements of synchronicity as well as stalemate in all projects. Even the most participatory looking projects had elements of stalemate and some of the least participatory projects had elements of synchronicity.

Therefore, reasons for successful partnerships extended beyond techniques used or when the public was brought into the process. Without taking into account the notion of synchronicity, assumptions about what works might only be a partial truth.

Building local partnerships was a struggle for most, but in a few cases just fell together. Sometimes agent training was a factor, sometimes existing community interest was a factor, sometimes outside interest was a factor,

sometimes the timing of funding was a factor and sometimes many or all of these elements came together in a synchronous movement of energy.

Following are agents' reflections on the challenges of bottom-up participation and my interpretations of those reflections. I consider first, agent perspectives on what participation is and why do it; second, several components of the process of building local partnerships that relate to the movement of information throughout a watershed community; and finally, the notion of trust as it relates to interpersonal communication.

Some agents saw the new emphasis on local partnerships as nothing new. Ben, a long time NRCS employee who has lived in the community he works with for many years said, "Partnering is a new terminology [but] there has been a lot of that going on for years and years and years and we are just giving it a new name...Partnerships is just a buzz word. I'm tired of it." And it is true the NRCS and CES have worked for years with traditional farm related organizations. What is different now, is the emphasis on bringing non-traditional groups into the process to reinvigorate deliberative democracy.

Others agents would like to have had more diversity, but they didn't know how to recruit people from groups not traditionally involved. Bob, a long time NRCS agent who has lived near the community he serves all of his life said, "I guess the people I'm not sure how to get involved are the ones like a banker for example. What am I going to do? What reason am I going to get him involved?...I know some of the bankers, but I just need to come up with a reason to get that person involved...Other than ag businesses that I can use their product in this watershed and they can get some advertisement, I don't know what else to or why else - I know the why, I should just to get their support so they believe in it. But I'm not sure how to get them involved...[O]ne of the

bankers is our assistant commissioner. We have a school teacher as just assistants. We just got them more or less to have somebody from town."

Bob and others bring non-traditional partners into the process by encouraging them to be SWCD commissioners or assistant commissioners. But beyond this, it was difficult for many agents who had not had training or experience in building coalitions or who didn't have existing community or outside interest.

Others learned techniques to bring a diverse group of stakeholders together, but it was new to them and stressful when they realized group process was unpredictable. Beth, a county conservationist who has lived and worked in her community for more than a decade said, "One of the things I've personally worked on for years is to be better at planning and organizing than I have been before...As I get better at that I realize that I can also tell when things aren't going in a structured way as would be most efficient and this [stakeholder group] is a perfect example of that."

Top-down approaches are more familiar for most of us. They are relatively predictable in terms of expected outcomes and there is a comfort zone for local change from the perspective that solutions are pre-determined. A top-down process seems more controllable, while a bottom-up approach may not produce expected outcomes. A bottom-up approach requires support within the system for community innovation balanced with funding responsibility.

Others had formal training to build local partnerships and felt comfortable with the process. Randy, a long-time NRCS agent new to the community said, "My background was in forming coalitions and creating local teams of people to address these kinds of issues...I think those techniques, the philosophy behind group involvement just works everywhere...[T]wo people

that I work with here are both Peace Corps people...and they used more or less a group approach in their work. It works everywhere."

Randy was one of the fortunate few that I talked to with real-world experience in building diverse coalitions. His experience gave him a sense of comfort and belief in the approach. He also had the additional benefit of fellow staff in his office with similar training and experience who shared a common understanding.

Regardless of training and experience, forming partnerships to solve local needs takes time. Beth said, "[J]ust getting the committee organized and getting the sub-committees to have a meeting took a year...[W]e have been doing data collecting all along, but we are just beginning to do something with it. I think up until just recently there has been a feeling that you haven't done anything and you've been together in here, what have you been doing. But we are finally getting started."

Because of the time-consuming nature of bottom-up participation, agents found the process frustrating at times. When there is a problem we would like to fix we are all used to just doing something to remedy the situation. We can find it tedious when solutions seem obvious to us or under-the-gun when we feel outside pressure to produce some tangible evidence that we are doing something. While the process is slow with a citizen groups that are highly engaged, it is even slower with the community at large that is generally not tuned in to a high degree.

The relatively short duration of funding for watershed projects adds to the pressure. Calvin, a long-time NRCS agent who has lived in the community he works with for many years said, "The problem is, it takes a year and a half just to find the north arrow. It's a pretty big project and once you get the people

accustomed that this is [a water quality project for our lake] you get people in the watershed thinking about it you've lost a year and a half probably. Then they say well maybe there is something to this...well half the project period is gone. In real terms all we do in three or four years is get the thing started...That's my main concern is get them to build a water quality conservation ethic within those three or four years that they may carry on indefinitely."

Problem identification

The process of problem identification was an important factor for where a project fell in the participation continuum. Passive participation in the problem identification stage meant the project never became very participatory in terms of the Pretty typology. When citizens were brought into a process of defining problems, discussion and developing solutions, the project had the best chance of moving towards the authentic end of the participation continuum.

Problems with a body of water were often, but not always apparent to the community. Problems were identified most often by agencies, researchers and Soil and Water Conservation District (SWCD) commissioners, then by non-farm water users and students and less often by farmers.

In many cases, the public identified a problem with a body of water when it reached a state where their senses could detect something wrong. Sometimes smell became a factor. For example, Randy told me about a note found taped to the Chamber of Commerce door saying, "We came, we smelled, we left."

Randy said, "[The] lake has been smelled by people on the interstate, you know, in the summer it just stinks that bad, in fact we have one of our soil and water conservation district commissioners has a hog production operation about three and a half or four miles southwest of the lake and he can smell the lake

over and above his hogs in his farmstead last summer when it got bad. I mean, that's how bad it gets....It's that algae can really give off an odor."

Sometimes problems were sensed by sight and people's memories. Martin, a long-time IDNR agent in his community said, "A lot of it comes from people that are life long residents of the lake that come in and describe their impressions of the lake and their memory of the lake...[T]hey can remember being able to visually being able to see down to certain depths during the summer months and that has changed."

Sometimes state or local water monitoring alerted the public of problems not easily detected by the senses. Beth said, "I don't think anybody really had a good grasp on just how bad it really was. The water except for times of flooding like this always looks really clean so you just assume it's clean cause it looks good."

How problems were framed and who was responsible varied depending on one's livelihood. Typically townspeople thought farmers were responsible for the problem. Ben said, "[T]here have been times of a little bit of animosity between urban people and rural people to the extent that the urban people look at this as being our lake and we don't want you polluting it and it's we against them type of thing. You see this all over the state."

The sentiment held by non-farm people, that farming is the problem, could explain why they are more likely to point out problems with a body of water. If we are comfortable in knowing it's the farmer's fault then we are comfortable in knowing we won't have to make any changes ourselves.

Generally, projects had more non-farm public involved in the partnership groups, yet there were more farmers than non-farmers volunteering to make changes probably because there were incentives for farm

conservation assistance and very little for urban or homestead conservation assistance.

Farmers who did identify problems with a body of water were most often SWCD commissioners who are typically a county's most conservation minded farmers. They have already made changes on their land or in their management practices, or are often willing and financially able to try new things.

Farm people's needs are less likely to be expressed in terms of a body of water. Their concerns were most often related to problems they might be having on their land. While farmers saw problems on their farm that they wanted help with, they did not typically come forward and say the problems on my land are hurting a body of water, what can we do about it.

Bob, said, "[I]deally you'd have landowners out here in this watershed come in and say we've got this problem [with our body of water], can you help us... 75 percent of our normal work load is from farmers that come in and say I got this field that's washing away. What can you do for me? That's not how this project got started...It's a city problem...It should come from the landowners to us, but we went to these people to sell them on the structures."

While farmers might recognize problems on their own land, they didn't necessarily connect those individual problems with problems of a body of water. Rather they perceived other farmers erosion problems were the source of the problem.

Calvin said, "Farmers thought other farmers were responsible. As a rule, farmers believe yes there is an erosion problem, but it's on my neighbor's ground. My neighbor is plowing that or he's taking fences out and plowing or he dozed the trees out or he's going straight up and down the hill. Don't think

about what they've done too much, but their neighbor is causing the problem. So there is a little getting them to think yes we all contribute...Obviously the further we get from the lake the less concerned they are cause they're thinking they don't cause a problem."

So not only is the source perceived to be somewhere else, there is a geographical element at play in that the further away someone is in a watershed from the watershed's focal point, the less they perceive a connection.

It seems that the problem identification stage is an important time to bring diverse groups together in order to develop an understanding of problems from different perspectives that goes beyond the immediate focus of the body of water. Needs will be diverse.

Needs assessment

Non-farm people were more likely to express needs in terms of a body of water. At public meetings held to inform a community about a proposed project, non-farmer concerns were most often related to the quality of water for drinking, fishing, swimming and boating. Often they were personally impacted either because their business was connected to the health of a body of water or their property values were.

Calvin said, "I guess from the public meetings the most information came from the lake users. The folks that were interested in fishing, boating and these types of things. Their needs were for conditions where they could do that. That's where we got the most actual public speaking. Telling what they wanted."

Farmers, on the other hand were less likely to express their needs at community meetings. I was told farmers use lakes and streams less than non-farm people. Calvin said, "There was a lot of folks in the watershed that really

hadn't made a connection to it because they may not use the lake. We didn't get their needs are to raise a crop, raise a family, make their payments. All the things that are necessary for business, but may not directly tie to the water is part of their decision making process."

Farmers may feel threatened to express their needs because they believe they are perceived by non-farmers as the source of the problem. Their needs get left out of the discussion in a public meeting setting. A level of trust and understanding has to exist before real dialogue can take place.

This was a fairly universal observation among agents. Even in group settings with farmers only there is reluctance to talk about specific needs. Ben said, " Group dynamics does no good as far as when you start talking about water quality issues for one...As far as farmer discussing what his operation is, what practices he's using...You can't do that in group because the farmer is not going to talk about things that are specific to him in a group...If you just want to present information and not have any feedback, then a group is fine. But if you want feedback, one-on-one is the only way to do it."

An exception to this scenario was when both farm and non-farm people had suffered from a drought and needed a new water supply. In this case a diverse group shared a common need and those needs were shared at community meetings. Discovering common ground is part of the deliberative process.

Funding

Danielle, a long time extension agent said, "It takes a lot of time to build a strong partnering organization. You certainly don't build something like that in order to apply for public funds. It has to already be there. The strongest projects are the ones that did have that already, had a local partnership." This proved to

be true as the most participatory projects had citizen groups formed before funding was sought and often outside interest either from research institutions, environmental organizations or private individuals with sentimental attachments to the community and skills to offer. This interest seemed to create interest leading to synchronicity.

Funding for watershed projects is limited and there is quite a bit of competition among agents to receive funding. Sometimes community participation is compromised because of these pressures. Andy, a young NRCS agent who has lived in the community he serves for many years said, "I guess we ended up using the strategy that when a new program first comes out jump on it and get all you can get because the competition will increase, or the rules will change and make it more limited in scope. So we tried to jump on it and we got it going then."

Bob noted that agents typically receive information about funding for projects, see that it might help with local problems and then apply for the grant. There is a window of time in which to get the grant in and it takes more time to do with partners than it does to do it on your own. He said, "Then again, this is just the truthful way that a lot of this stuff that happens...[Y]ou always have needs I guess. But we see opportunities like grants that are available and we--sometimes then we put together a project with them [in mind]...The information comes through the mail and there is money that's available and we say yes we've got that problem out here NE of town that is identical to what they're looking for here so we go after the money. So that's a lot of it."

A coalition of interested stakeholders will sign off on a grant, but they may not always have been highly involved in the process. As Danielle pointed out, "[I]t's easier to write a project proposal and send it in as opposed to

circulating it among a dozen people and waiting several weeks while they all talk it over and incorporate all the changes and making all the trade-offs between everybody's priorities until you get a document everybody agrees on."

Where citizen groups were already highly involved they were included in the funding process. Randy said, "[T]he committee helped us develop the grant application...[T]hat's the first time I ever had drafts of my grant applications reviewed by [local] people. [In the past], there was never anybody available really to give me a good review, or when they were available they really didn't give a darn, it was just to satisfy me and they just accepted it and we went ahead. Well in this case we had review by local people, had real good input and so it became a stronger application and those people then said when this is funded, not if, but when this is funded,...they didn't want to let go of that. I mean, they felt the ownership of that even before we had the dollars to continue or to have a real project. So that was a wonderful thing...And so, it just flowed really nice."

Ironically, once funding is obtained, it can lead to a less participatory process because there are pressures to get the money spent in the allocated time. Jim, a young extension agent new to the project and new to the community said, "Try[ing] to get people involved was the utmost in trying to get the money spent. Again those funds have certain stipulations they have to be allocated at a certain time and spent at a certain time and so those pressures are kind of working on us also."

Community participation takes time to create, to deliberate and to operate. Every community has needs and local agents want to be able to respond to those needs. Agents feel a sense of urgency to get funding for their community and then there is pressure to get funds spent in allotted times. If everything is

flowing to begin with, some of the pressure is reduced, but if partnering is still forming, short-cuts may be taken at the expense of participation.

Information and education

Most projects had limited funds for information/education, making these efforts problematic. Danielle said, "Education is something that agencies want you to do, but they don't want to give you very much money to get it done. It seems that education is often something that technical professionals are expected to do in their spare time."

Projects with an information/education specialist were a small minority. Most of this was done by agents on the local level who are trained primarily as field specialists. On the whole, agents felt there were too many things required of them now than in the past. Not only did they have to be technicians they also had to be communication specialists and community educators.

Bill, a long-time extension agent said, "It's very difficult for me to develop communication pieces, like press releases and...who to touch for interviews and setting up that kind of contacts...I can do the work, but sometimes I have trouble telling the story."

Information about a problem was often spread through informal channels of communication. Bob said, "It's a word of mouth type thing. It's just when you're in a town of 10,000 people or whatever, if there is some pesticide showing up in the water, within a number of years everybody knows about it."

Word of mouth was often depended upon for disseminating information out to farmers for many agents. Calvin said, "They like to talk to each other. They like to lean across the fence and say what's going on. Whether they're in the coffee shop or the implement dealer or at the co-op. So probably most of our information was being shared at that point so I think there was a lot of positive

because you'd bump into people and they'd say I see you're doing work at so and so's place. They know what's going on in the community without having to be taken by the hand on a tour."

Bob came to appreciate the effectiveness of word of mouth by observing a stakeholder member at community meetings outside of the watershed project. He said, "I've seen him complement me a couple times...he's telling people how busy we are and that gets me motivated more than anything else, just moral support...showing somebody you are doing a good day's work.

Information was also spread through formal channels of mass communication. Communication research shows this is a good way to increase awareness, but changing attitudes and behavior is best achieved through interpersonal channels. Agents often seemed to be running themselves ragged in order to keep information flowing at the same time keeping up on technical duties. Agents would like to know what part of their information/education outreach was most effective, but typically they were unsure whether mass communication or interpersonal communication or both were working.

Changing attitudes and behavior

Ultimately the goal of information/education outreach was to change behaviors. Even with funding this was complex because information needs do not remain static in participatory projects. As stakeholder groups and the community at large become more aware of problems their perspectives change so needs change. Danielle said, "Projects don't get completed because local needs and priorities evolve and because in some instances I think it takes a long time to get people to change. You don't go crashing in and show a bunch of farmers or a bunch of urban people a lot of posters and do a lot of special PR and

demonstrations for a couple years, leave again and expect to see long term change."

Most agents were overwhelmed with the process of raising awareness, let alone changing the behaviors of individuals in their watershed communities in the time frame of most funding. One compared the effort to smoking and littering campaigns. Randy said, "I liken this to the health professionals trying to get us off nicotine...We're trying to wean these people off of phosphorous...[W]e got to get people off the habit. So that's a huge challenge to change public behavior. Public perceptions, public attitudes, public behavior - massive challenge...Yea, change peoples behavior in thirty-six months? Look how long we've been battling this smoking thing, I mean it's been going on for decades and we're just catching up to those rascals now you know."

Some just hoped that by getting a few to adopt conservation practices others would follow. But they also recognized an aspect of human nature, which is that behavior is hard to change unless the idea to change comes from somewhere within an individual.

Bill said, "That is the goal is to transfer the technology to the public and to adopt it. And we can't teach every person in the state because we haven't got enough money, but we can plant the seeds of ideas and hopefully they'll start growing and flourishing. And other people will see it and start adopting...these practices um on a voluntary basis, making the assumption that it was their idea to do it...I use the analogy of herding cattle. If you've ever tried to drag cattle to water it's very difficult, but if you get behind them and herd them this way, and herd them that way, they'll get there and think they did it all by themselves you know. No one had to drag me, I walked."

Others chose to break solutions down into parts that would be more acceptable to the individual. Calvin said, "I could lay out the best solution in the world, but if it's not simple to their liking they won't do it very well, they won't do it very long...Sure I'd like to have my nice conservation plan of the whole farm, but maybe all I can get him to do is seed one hillside down or plant trees. That is a start. Or do one waterway. That is a start, and that is how you work with these people...Generally people will do what they want to do. I do what I want to do."

The notion here is that no one does anything unless they want to and they are more likely to want to do something if they think it was their own idea. But especially with farming components of a watershed, and the rules that go with incentives, there is little opportunity for farmers to be innovative, to participate in the process of developing solutions to problems that would then really be something they had helped to create.

But the notion of farmer innovation was problematic for many agents. In Bill's case, he wants farmers to think they have come to their own decisions, yet he wants them to adopt practices that have been developed outside of their experience. He said, "[T]he only thing I ask farmers when they add ideas or why they did what they do, I ask them why. Is there a good reason for it. If there is a good reason for what you're doing then that's acceptable, but if you're doing it just because that's the way you've always done it, I think you need to ask yourself to examine that method a lot closer. Don't just keep following, being sheep and following, determine for yourself why you're doing something and if it doesn't make sense then just change it."

In Andy's case, he has found farmers to be filled with innovative ideas, but he has been unable to incorporate those ideas and reluctant to try because his

work environment or funding is not set up for this. He said, "A guy walked in the office the other day and said he had an idea for different legume species we should do on our demonstration. I couldn't get an OK. We're not going to do it, but it's--I like to hear those ideas. Maybe we need to send the word out more that we're looking for ideas and feedback. The thing is, it's kind of a touchy issue in some ways. You ask them to give you ideas and feedback like lets do some stream monitoring or whatever, then you come back to them and say well it ain't going to work...you almost hate to ask them for something, for their feedback, and then not come through with it."

Again, perhaps this gets back to the notion of responsibility. Who is responsible in a bottom-up initiative? Can there truly be a blending of knowledge bases? Being able to share responsibility with citizen groups requires trust at many levels. Randy and a few others were up-front in acknowledging that they didn't have all of the solutions. He tries to provide information that allows people to come to their own conclusions. He said, "I think my philosophy is that if you kind of give the people enough facts often enough, that they'll make the right decision. And that's about as optimistic as I can get about resources and the planet. You know, we just have to do the right thing over and over and over again, and hope that large enough numbers of other people choose to do the right thing also. And adjust, you know, cause the right thing seems to change you know, we think we're doing the right thing and then, 'Ooohh, we should have done it a little different,' and so just be flexible and just do the best you can every day."

Randy recognized that his agency is not always right. This was one reason that he liked working with citizen groups because then everyone shared in the decisions made, which ultimately took some of the pressure off of him. His

approach gave him the freedom to adapt with his group to changing situations and to share some of the responsibility.

Technology and social solutions

NPS pollution requires social as well as technical solutions. But in most projects, there was a heavy emphasis on technical solutions especially with regard to the farm component of a watershed project. This usually resulted in a greater focus on end results rather than on the process of getting there, which is a key element of bottom-up participation. The reverse was generally true for urban components of a project.

Incentives and farm participation

Incentives for capital intensive conservation practices focusing on overcoming nature were easier to sell than incentives for management intensive conservation practices focusing on understanding nature. For the NRCS especially, structures such as terraces have long been viewed as the more effective long-term solution. They provided a sense of security because agents know they will be on the land controlling erosion and acting to some extent as filterstrips for at least 20 years regardless of whether ownership or tenant changes hands.

While 20 years is a long time in human terms it is short in geological terms, and as federal dollars shrink and construction costs rise other less costly approaches such as management practices are being encouraged. These include grass waterways, buffer strips, no-till or reduced tillage, Best Management Practices (BMPs), Integrated Crop Management (ICM) and nutrient and pest management (See Appendix A).

However, conservation management practices have a longevity that depends on a landowner's or tenant's philosophical outlook. Bob said, "[W]e

can work with these people individually and we can get them to do some rotating with grass or we can get them to use some conservation tillage, but the next person comes along and he plows everything up or he destroys his grass...[T]erraces are going to be there no matter who's farming."

Management practices are more difficult to keep interest in. They require a philosophical change and a comfort level that allows producers to look at long-term profits vs. short-term profits. Andy said, "We had some group meetings to try to promote the integrated crop management part of it which...are some of the hardest to get implemented. They're just not used to thinking that way. They think about terraces and ponds, things like that. It's easier to visualize it. Once you've built it you're done. But with the management things, it's a process that is never ending. You have to stay at it."

Many others agreed. Calvin said, "[M]y biggest disappointment is not the terraces and waterways structures that we are building to control water gullies and sediment, it's the disappointment in the ICM we're dealing with. Realistic yield goals and right amount of nitrogen fertilizer and the right amount of pesticides and all this stuff and growing the right kinds of crops that are good for the land and good for the checkbooks. It's a hard sell because it's a lot of blue sky. It's record keeping. Farmers keep different kinds of records."

So conservation practices that are relatively inexpensive to fund are more difficult to sell than capital intensive structural practices. Conservation management practices involve a process that is time consuming, philosophically foreign and non-tangible. Farmers were reluctant to adopt these practices. This goes back to change coming from within. We are slow to embrace change unless we have had time to process information through our

own life experience. Incentives are not always enough unless there is clear understanding of the benefits.

Incentives and non-farm participation

The most participatory projects, in terms of the typology, were so primarily because of non-farm involvement. Funding seemed to play a role. Urban incentives are largely unavailable. Therefore, when a community did recognize that there was also a town problem, they had to promote change in ways outside of incentive constraints. Non-farm education aimed at raising awareness and changing behavior relied more heavily on local innovation and activities to address local needs. This resulted in bringing more groups together for problem solving.

Non-farm public participation involved an emphasis on management practices such as preventing grass clippings, leaves, oil and lawn care chemicals from entering storm sewers, and community activities for recycling, composting and collecting household toxic chemicals. Additionally, urban and farm groups came together to work on environmental restoration projects. These kinds of projects found local and outside funding and non-funding support for outreach, but did not have incentive or systemic constraints blocking community innovation.

On the other hand, because of the lack of urban incentive dollars, there was less emphasis on raising awareness about problems with private and municipal sewage systems, which require capital intensive solutions rather than behavioral changes. This was frustrating for those agents who knew they had significant human waste problems besides agricultural source problems. Beth said, "[T]here isn't any cost-share money for landowners to fix their septic system...but there is lots of sources of money available for livestock operations

and dealing with some of those problems, but there is nothing for a problem in our case that is at least 50 percent of the problem or maybe more."

Incentives have the power to increase participation numbers, but at the same time, incentives can dampen innovation. Incentives do not necessarily promote deliberation and because of this, more socially oriented solutions become problematic.

Keeping stakeholder interest

Participation levels tended to ebb and flow over time. Even the most participatory projects had trouble keeping levels of interest up among stakeholders. Particularly when immediate goals were met, it was difficult to sustain interest.

Elton, a long time NRCS employee who has also lived in the area he serves for his entire life, said, "There is nine board members and it kind of rallies up and falls back down a little bit. When we had some specific things that we wanted to get done, the lake association was real active and we raised a bunch of money...[T]hey were raising that money and pretty active then putting out information and talking to people then we had a lot of meetings and things were going then we kind of got that accomplished and then there wasn't as much going on...Then it's kind of fallen off a little again...So it's been up and down. There is a core group that's always there and is interested.

At this point, participation efforts would sometimes revert to less participatory approaches out of frustration. Andy said, "It seems to be...after awhile you just kind of reach and end. Maybe you need something fresh to come back with...One of the problems we had with the advisory committee is that we give our progress reports and talk about this and that and whatever is on the agenda, then try to do something to develop ideas to generate ideas cause

otherwise we just set there. A year or so ago I developed a water quality quiz that had a bunch of trick questions on it in hopes of generating some discussion. It worked a little."

Here they accomplish things and don't know what to do next. This was fairly typical. Projects with on-going revision and examination of short and long-term goals developed by participants seemed to be less at sea, but even these groups had their problems with participation.

For example, sometimes participants came to meetings, but never became highly involved. Randy said, "We've tried to get people who are committed and who are workers rather than just people who come, we've got several who come and sit and listen, won't speak up, won't take part in activities. We ask for volunteers for different things and there's a few that just don't want to participate and I don't know why you'd want to go to a meeting if you don't want to participate that's my personal thing, go home and read a book you know if you're not going to get involved...We've got a diversity in terms of insider energy level or participation level or whatever."

Some maintained good participation, but came to accept the role of a citizen group as advisory only, rather than action oriented. Beth said, "My original hope was that the committee would want to be more active than they are. But they want to be advisory. That's OK. Mostly the practical side of it is nobody has a lot of time and...if we're going to keep them then that's what we're going to have to do. That's fine. So at least we know that we have some guidance as...a governmental agency. We have a responsibility to make sure we're serving the needs of the public, and this way it's basically a very formal way of gathering that input and getting some guidance as to what kinds of priorities we should be establishing."

Participation over time requires a renewal of energy coming from local change agents and their agencies, stakeholder groups, the community at large, outside interests and physical and historical events, the orchestration of which is beyond the capacities of any of the players alone, thus the notion of synchronicity.

Evaluation

Paper work to funding institutions was done by agents. A project's success was measured most often in terms of outcomes vs. process--on ends rather than means. Projects were evaluated most often by the number of farm ponds constructed, or by the number of feet of terraces or by numbers of participating landowners, or by the percent of land with conservation practices in place, or by the number of landowners or tenants adopting conservation management practices, or by ICM services that become available. These are tangible, easily identifiable and quantifiable results.

Some coalition groups evaluated their efforts, but only if they had spent time developing long and short-term goals. But again, the focus was more often in terms of what had been accomplished rather than on the actual process of getting there, so the emphasis was on ends rather than means. Process and interactive education are key elements of bottom-up participation, but they are illusive when it comes to evaluation.

For the NRCS, it was hard to show success for urban work like lawn care changes or storm sewer awareness and other educational efforts. Randy said, "There's no way to show progress within our computer system for working with someone on their lawn or working on storm sewer situations...all the information education things...that we're working on. I mean our system is geared toward conservation practices on agricultural land."

Surveys

A few projects had enough funding to conduct pre and post tests to determine attitude and behavioral changes in watershed communities, but these were the exception. Because of outside research and strategic interests, these were projects that were likely to last beyond the typical three year project.

More often surveys were conducted once to gain base-line information about farmer attitudes and practices in order to help agents develop conservation plans for the watershed as a whole. Ellen said, "Most watersheds you have a very small number of farmers...We learn a lot of useful things about dealing with them...by surveying them, but being able to evaluate change with a survey is limited. Being able to interpret differences as accurately being changed is very difficult because of the small number of responses and other things. It's a little bit like water quality monitoring. We now know that water quality like ground water and surface water quality respond very slowly to changes. The idea that a 3-year project could have a measurable impact on water quality is just not possible."

Monitoring for changes in water quality

To be able to show that water quality had been improved was an issue agents and citizen groups struggled with. They would like to be able to show their community that water quality has improved because of efforts made in the watershed. But to do so was viewed as complex, time consuming and expensive.

There was frustration that water improvements could not easily be shown and pressure to prove that changes on the land had really made a difference. Calvin said, "The water quality we know it's going to improve... Philosophically yes, we know we made a difference. Technically we know we

made a difference on that field on that particular farm...We just can't measure it...That's the burning question. We have asked a lot of experts...and the answer to that is they don't know...And people want to know. 'Well you've been working out there for five years and we still got a silt problem, what are we going to do?' Well, it's been silting for 60 years and five years is not going to do the job."

Monitoring requires a long-term effort because changes in water quality are extremely slow. Even when a project is well funded to monitor water quality over a long period of time, and reductions in siltation and nutrients entering a body of water can be shown, visual indicators that a community might observe often get worse. Even when erosion is controlled and nutrient usage reduced, nutrients from the past remain for a long time in a lake. The lake has been a nutrient sink, or storage place of excess nutrients for a long time. Algae, the most obvious indicator to the public that something is wrong, continues to bloom and may even increase with less sediment and more light.

Some citizen groups recognized that fully cleaning up a body of water might not be possible. Beth said, "Actually one of the things we had to deal with is deciding what's our ultimate goal here? Is our ultimate goal cleaning up the creek?...We're still keeping in the back of our minds the possibility that they aren't going to be able to clean up the creek with available resources...The ultimate test is going to be the quality of the water itself. But there is so much that goes into determining water quality even more than land use practices..."

Linda, an NRCS agent new to the community, was frustrated because monitoring was expected by funding institutions, but funding for monitoring was not always available and it was a struggle to find it. She said, "One of the things too that seems like when we work on our project they want a monitoring

component in the grant application. You're going to monitor how this is all working and if it's working. Some of the monitoring can be expensive if you really want to do it right... It doesn't happen for free. When you apply for these grants none of them at least [the ones we applied for] really want to give you any money to support monitoring, but they always want monitoring so that was confusing to me."

Linda eventually found funding for monitoring but even this could be problematic when researchers move to other jobs. Linda said, "[W]hen you get funding for a project at the time you make an application and everything is clicking then you have people who leave the community or move on to different jobs and then all of a sudden you get gaps in how to monitor or how do you show that improvements are really happening. There is no funding to assist when those loopholes happen in a project, so then you've got to spend time away from some of the creative urban education programs maybe working with some of the local groups and organizations to get back to the basics of we need to get some relationships to reestablished here that monitoring can happen again...That takes a lot of time."

Two groups were able to develop citizen monitoring in collaboration with institutions that seemed to strengthen each other. In these instances the agent was intentionally creating a learning environment, where knowledge about a watershed was generated by both scientific and local knowledge. As a first-time experiment for one agent, the results were satisfying. Beth said, "I think it just surprised me at that time of year, when you're so meetinged to death, right, then it just surprised me that people are interested in attending meetings." The learning environment seemed to keep interest up for these two agents and their stakeholder groups.

People and process

Agents often mentioned they would like ways to evaluate the success of a project in terms of the process rather than the end results, but end results were more tangible and more what funding sources required. Even though agents were always looking for new funding they also knew that continuing citizen participation was necessary to sustain projects after the end of funding. Calvin said, "The government's not going to make a difference, it's the people who live here. That's what's going to last forever...The program will die in another year or so. The federal grants will dry up, the coordinator will probably be leaving or doing something else, that kind of stuff. People will stay and the land will be there, so the coalition is what's going to keep it going."

Beth said, "It's [the advisory group] going slowly and it's not well organized, really well organized and it's not following a detailed structured plan with a timeline. I doubt it ever will. In other words it's a lot more people oriented than task oriented. I think that's OK. We still need to get some work done for a variety of reasons, but if there is anything I've learned is that in this case, bringing the people along is probably more important than bringing the creek along. The creek will follow. That will happen in time."

Community Participation: Trust

The notion of trust, either implicitly or explicitly described by agents, transcended all watershed projects. Agents shared stories of how they came to buy into the notion of building trust, how they struggled to gain trust, what happened when they didn't gain trust, what happened when they did gain trust, what they did to build trust, the hurdles they had to overcome to gain trust and how they struggled to develop partnerships as a mechanism for building trust with the public.

Mistrust and misunderstanding is part of human nature and existed in some form at various levels in all watershed projects. Regardless, agents were overwhelmingly in agreement that trust with the public was essential for forming successful partnerships and ultimately for the successful adoption of conservation practices.

Besides the notion of trust between agencies and communities, agents talked about the notion of trust between stakeholder groups, between agents of cooperating agencies, and between agents and agribusiness. For example, agents might work with a community where trust was low because of events that preceded their arrival; or they might work with stakeholders in the community who mistrusted each other because of tensions about where the source of the problem lay; or they might work with agents of other cooperating agencies where trust was low because of philosophical differences between agents; or they might work with agribusiness and lose trust also because of philosophical differences.

Trust between agents and communities.

Dan, an NRCS agent new to his community, entered into a project with an existing history of community mistrust of another agency as well as mistrust of his own agency that was adjusting to a more regulatory role than it had been in the past. Through hindsight Dan has been able to piece together a series of events that compounded a lack of trust between his agency and the public that had already begun with the new compliance era. He explained, "[B]eing the new kid on the block, I really did not know the community in general very well yet. I came in at the start of this conservation compliance era that basically radically changed life in a field office like this and we had a work load like we never've seen before...I did not get out and make the howdy rounds and meet a lot of the

key people you want to when getting into a key position. We pretty much were buried right here trying to keep our heads above water. What I'm leading up to is, when this project began to come forth, I didn't have a lot of credibility as far as my track record in the community."

Building trust with a community takes time. Agents who are new to a community have both an advantage and disadvantage. They don't have a track record with the community, so they may be given the benefit of the doubt until their actions prove otherwise. At the same time, they are at a disadvantage because they are viewed as an outsider and building trust takes time. Dan, being new to the job and trying to develop a department that could take on new responsibilities, decided to depend upon the direction of a county conservation board who had been in the community for a long time and who had initiated the project. Dan figured the director could act as a point person who would link the project back to the community. He said the director told him 'I'll take care of this, I've been around them a long time.'"

But as things settled down in the office and Dan began to go out to visit with people in the county, he also became aware of tensions between the community, the park and the county conservation director. Dan said, "Keep in mind there was 20 years of somewhat frigid relationships between the park and the neighbors. Just because a lot of people don't like public entities coming in and gobbling up land and butting up against their borders--and a few things like a deer herd developing in there that come out and eat crops--causes friction and fence line controversy...I quickly learned that [the director] had a strong personality and I heard rumors that he was difficult to work with at times and what not...So anyhow, I think that just the fact that there was this history of not

always rosy relationships was part of the problem with getting some of the neighbors real interested [in the project]."

So from the beginning, Dan had three strikes against him. He was new and had not had time to establish personal trust with the community, his agency had become more regulatory in nature creating a climate of mistrust between farmers and his agency and another agency had set a confrontational tone in the community.

Most of the landowners eventually agreed to participate. But one key landowner would not agree to an easement onto his land and without that agreement the project would miss the opportunity for funding. Dan found himself in the middle of a project that he had not been a part of developing. He was torn between wanting the project to proceed and wishing things could be less confrontational. He said, "[W]e needed an easement from them to get this project to fly. At least as the county conservation board wanted the project done. There might have been some alternatives to alter the plan, but that didn't work for the county board director...If relationships were good and everybody was cooperating together I think something could have been worked out that would have been fine, but that wasn't the case so we ended up basically either losing the project or going through condemnation process, which the county conservation board chose to pursue.

Because of funding deadlines, a sense of urgency compelled the board and its director to forego the voluntary process with this one particular land owner and Dan was stuck in the middle of it. One agency had set the tenor of the project before another could participate in a meaningful way. To make things worse, much of the project was kept low key upon the direction of the county

conservation director who was already receiving bad press and rumors continued.

Eventually, Dan's agency became part of the rumors going around. Dan knew the rumors about himself and his agency were false so at this point he began to develop empathy for the director. He said, "[L]ooking back, I think some of the controversy--there were some valid questions raised, but I think there was also some, oh what do I want to say, some people were out to get him. They didn't like him and they were going to get him, so there were a lot of things going on and a lot of stuff in the press and so I kind of understood where he was coming from wanting to low key this. [But] I think some of the problems of not being up front with publicity, and the director made that decision, [he said], 'no we're not going to be telling people what we're doing. It's none of their business.' But I hear later on the rumors around the neighborhood is that we went in and we did all this work and these guys [farmers] didn't have to pay nothing for it."

While agents know word of mouth is effective in spreading information through a community, a positive outcome of the message depends on trust and shared understandings. Without this, messages can become distorted and rumors prevail.

Bill found himself in a similar situation where one agency's relation with the community strained relations with all other agencies including his own. In Bill's case, the state conservation agency had spent tax dollars dredging the lake and wanted to assure that further sedimentation would be reduced. They did so by taking regulatory action against land owners using state laws. The court ruled that land owners had to reduce soil loss to an acceptable level and ordered the SCS now NRCS to encourage farmers to voluntarily participate in water

quality improvement practices. At the same time, if they didn't participate, they could face mandatory regulation.

Extension's role was also to work with farmers on developing and implementing conservation plans for farms. Bill, in summing his situation up said, "The farmers were already very upset because of the soil loss complaint that was being leveled at them by one branch of the government that was forcing another branch of government to design mandated conservation plans and here I am, another branch of government coming in and 'Say listen, I've got some technology I'd like to transfer to you' and I was just painted with the same paint brush that everybody else was--'You SOB from the government.' So it was very difficult to overcome some of those objections because they were perceiving that I was another mandatory program."

The situation must have been frustrating for all parties. For Bill, because he truly was there to offer advice and not to regulate, for the SCS/NRCS, who had the role of offering voluntary assistance to landowners, but at the same time the unenviable task of making sure folks were in compliance for another government agency and finally, for the landowners who probably didn't know who to trust for if they did not "voluntarily" choose to adopt new practices they faced mandatory regulation.

Bill believed that because it was a small watershed, word of mouth would work for getting out the information that his program was truly voluntarily. But the community remained mistrustful and getting people interested in trying some of Bill's agency's ideas was a struggle. He said, "We tried to make it obvious from the very beginning that we were entirely voluntary, if you want to be part of the program fine. In that watershed where everybody knows everybody, it's just a small little watershed, the amount of people who dropped

out, it should have been obvious to all those who stayed in that you could drop out and there weren't any repercussions."

We can sense Bill's wonder and frustration at not being understood by landowners especially when his intentions were well meaning. He believed word of mouth should have allayed any residual fears. We have all probably experienced at one time or another the realization that something we think of as entirely straightforward and positive has been, to our amazement, perceived by another in a completely different and negative way.

Participation then can be affected by the history a community has with government agencies. From Dan and Bill's perspective, farmers tended to lump all government agencies together and this was frustrating. While bottom-up participation takes time for deliberation it may save time in the long-run. Messages traveling by word of mouth tended to be positive when perspectives had been shared resulting in understanding.

A project that looks less participatory as a whole in terms of the typology, does not necessarily mean that it was less successful. Other factors, including existing community trust could make a project flow even though there was less bottom-up participation in terms of the typology. Another project like Dan's and Bill's with a small watershed looks less successful if you look at the typology alone. Like Dan's project, this lake project also involved a relatively small watershed and a park, but long time relations were good.

Mark, a long-time SCS/NRCS employee, headed up the project. He had lived in the community for many years and knew the farmers in his district well. He said, "I think the manager at the park at the time--for some reason they all liked him and I think that helped a lot...The land is all pretty close to the lake...Most of them can see the lake from their farm...I think they were

concerned about the lake and their land both...It's a small area...[S]ome places you go to a small area and they aren't neighbors and with this bunch, they all seem to be neighbors. They all knew each other and knew what everybody was doing...[T]hese guys all went to [the same] school and some to the same church...They all worked together on other stuff...farm work and community stuff and school...One did a conservation practice and the other thought they would do it.

Mark pointed out that these kinds of community cooperation are not always present. He said, "We had another project in another part of the county and they didn't act like they knew each other. [They] all happened to be where they went to different towns...[T]hey all went to a different church and half to a different school, they just didn't work together or anything. Was hard to get them to do anything. Individually they were just as good as the other [people in the other project], but collectively they just didn't think that way...It took forever to get anything done." Even though Mark worked in the same way with farmers in both projects, the level of participation varied because of community spirit and trust.

In another watershed project involving a park and a conservation board, the agent's philosophy about working with the public was dramatically different from Dan's watershed. Beth said, "We have as a conservation board...the option of issuing a complaint and having the state hop down the necks of [those] violating quality health problem or significant soil erosion problem or something like that, and have somebody force them to clean up their act, but that's only going to piss them off...There have been a number of soil loss complaints like that in the past. But I don't think it solves the problem. It certainly doesn't educate anybody and it only creates a financial hardship setting

up an adversarial relationship between governmental agencies and private land owners and I don't think it has to be that way."

Dan agreed that there were other ways to work with the public. He said these sorts of incidents had contributed to the movement towards less regulation and more bottom-up participation. He said his agency, even though it still has a compliance mandate, has moved away from regulation to one based more on education and voluntary participation if at all possible. As part of his continuing education, Dan attended a workshop about building community trust where one of the presenters was a farmer. The farmer's presentation had a profound effect on him and was a turning point in the way he approached his work and his community.

Dan pulled out two pieces of paper with triangles drawn on them (Figures 7 and 8). He said that the farmer presenter had developed these models by studying literature about trust including Gibbs (1978). The models made sense to Dan in light of his experiences with his community. Dan explained the models as the farmer had explained them to him. He said, "What so often is the situation in society is this inverted triangle where control takes up the base and the point where trust and understanding is a minor part of the mix. Communication is less effective and the goals flow more from control rather than trust and understanding and then the whole point of it is that this is a tippy situation...[W]e are forced to rely on rules and regulations to prop it up."

Dan continued, "With trust and understanding creating the stable base of the triangle, it is a stable situation...If we can make that change there can be fewer rules and regulations...[W]e have dabbled into the regulatory arena the last few years in my agency. Never before had we done that. It has pretty much been an agency based on a voluntary approach and service provider and all of that.

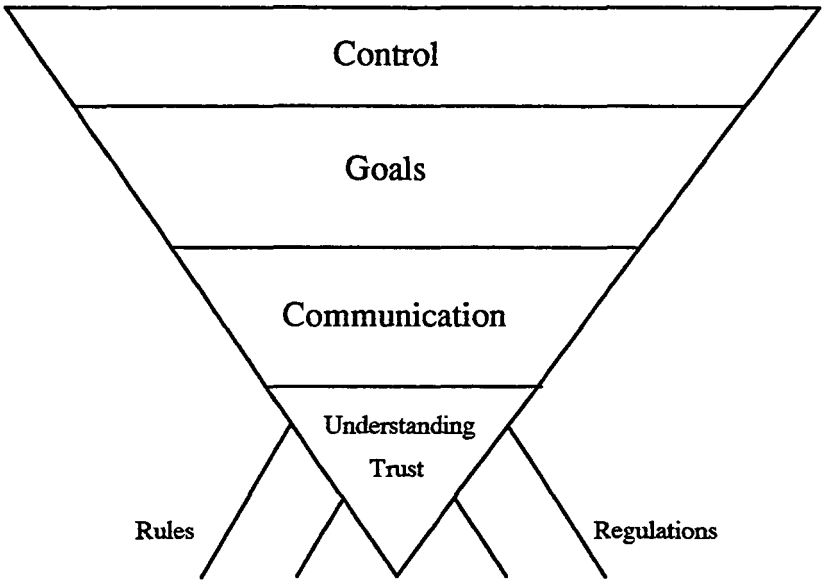


Figure 7. Farmer's Adapted Top-down Regulatory Model

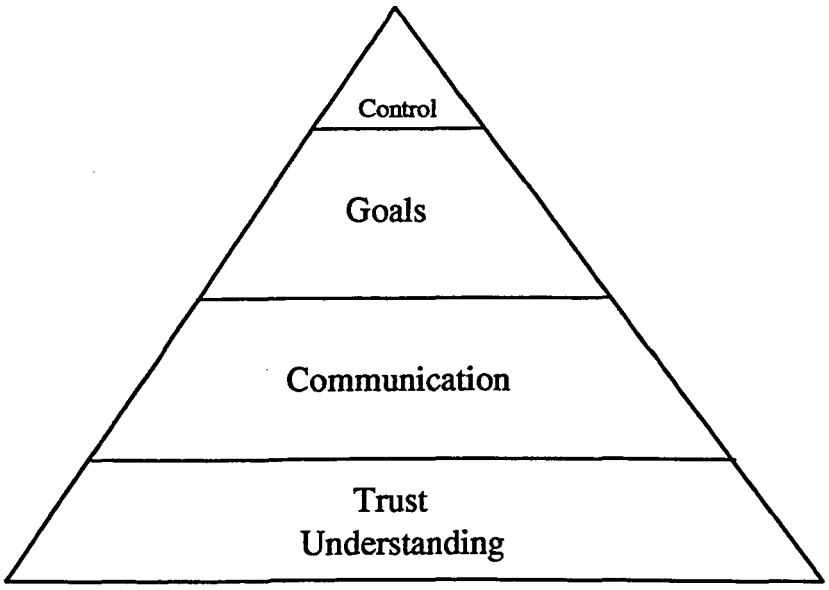


Figure 8. Farmer's Adapted Bottom-up Participatory Model

We picked up a regulatory flavor. Some people might like it, but I personally don't. I have seen personally how you can alienate the heck out of people when you come in with the stick and say thou shalt or else."

While Dan had not played a strong role in the early stages of the project, he had gone out to farmers to sell them on conservation structures. He knew what was needed and was surprised when farmers did not like his ideas. Dan learned from this experience. He said, "I violated some of the basic marketing strategies of identifying critical issues, going out and developing alliances and identifying roles of partners and determining customer needs and how you are going to meet those needs and developing strategic action plans...I will never presume to think I'll know what people need or want without listening to them first...It took me awhile. This marketing talk has been going on for the last year and a half or so, and I didn't buy into it at first. I kept thinking marketing, advertising, selling? Finally it dawned on me that marketing is just...a very logical way of organizing how you take on a project or how you run your day to day operations."

Dan had to experience a situation where he knew he could provide assistance to farmers, but he didn't know what to do when they didn't buy into his ideas. There was a lack of trust because they hadn't been involved earlier on in the decision making process to make them want to participate.

Bill's approach also didn't involve farmers early on in the process, but unlike Dan, he hadn't come to a point where he was open to doing things differently. Instead he was frustrated. He said, "[F]armers are a lot like government, they don't really tell you what they expect and then when you're done with it they tell you you didn't provide me with this and I say well you didn't tell me you wanted it. Ah, that's a very hard one."

Projects like Bill's and Dan's did not create situations where farmers could participate in meaningful ways. Farmers were expected to adopt practices that made sense to the agents, but not necessarily to them. When we feel that we haven't had a choice, or if someone points out that we're doing something wrong, we often balk, get defensive and deny a good solution simply because we did not go through a process that allowed us to come to a similar understanding. Instead, we dig in our heals, get stubborn and criticize solutions. The desire to change has to come from within.

People need time to think about change and they probably will be more amenable to change if they are brought into the process early on. Otherwise their instinct will be to continue doing what they've always done because it's worked well enough. Change means accepting that the way you have always done something might be done better in a different way, and this is sometimes hard to accept.

Several agents found creative ways to approach people in the watershed whose participation was desired by project advisory groups either because they were viewed to be having a problem or their land was needed to make a project fly. For example, Beth said, "Rather than discussing them in an open meeting, it was agreed there would be a couple people who would...visit those landowners privately and ask them if they would be willing to work with us voluntarily to do some things...One was a member of the advisory committee herself that made the contact, and in another case somebody else was asked to make the contact. You need to find somebody who has a little bit of credibility in the eyes of that landowner and like we will be able to get in the door."

It took someone who the landowner trusted to approach them and say hey, we see you have a problem and we have some funding to help you. Agents

work at developing this kind of trust, but sometimes a community member from their partnership group was a better choice, or even someone the group knew. Beth said people typically knew they had a problem. One advisory group member told her that when she approached the landowner he indicated he had heard about the watershed project and said, 'I was wondering when you were going to stop by and talk to me.' So because the landowner trusted the person who approached him, he was willing to talk and eventually participate.

Trust between stakeholder groups

Agents told me that building trust among their partnership groups also took time. Beth said, [The advisory group] all knew up-front that we disagreed on a lot of things, but we had some basic points of agreement and there was an agreement right up front to basically agree to disagree and work with the things we had in common. Yet even with that agreement, it still took time to develop a certain amount of trust so that we could have an open and honest discussion of what's going on and how people are feeling and what you honestly think needs to be done and how long is it going to take."

Beth recognized mistrust among members of the advisory committee early on when non-farm people, including herself, assumed the problem was coming primarily from agriculture. She said, "We are getting an idea that we've got both human caused problems and livestock caused problems...I think one of the things that was eye opening for all of us is that when the contamination problem was discovered in the first place, there was a tendency on everybody's part to point a finger at agriculture right away...I think there is a general bias when you have a problem like this assuming that it's and agricultural issue and I think there was some defensiveness on the part of particularly the commodities groups and Farm Bureau–lack of trust. Not all knowing exactly

what the conservation people, what our hidden agendas were and things like that. And then of course you've got the representatives of the city councils who may very well be very environmentally minded, but they want to blame it on agriculture because then it takes the heat off their back about updating their waste treatment systems."

Problems with human waste were problematic for a number of watershed projects. Without incentives to address human waste problems, agents didn't expect the non-farm public to volunteer to participate in the project if it focused on problems with human waste, so usually this issue was avoided. Elton said, "There hasn't been a big push to point fingers at a lot of people that way. If there was an incentive program to help get people through that I think we'd have more people coming forward and wanting to have those checked. At this point it's more if you tell somebody that you have a problem like that more than likely they'll say you have to fix it now and maybe even slap a fine on you to boot. So why would you come forward."

It is rational not to come forward to say you have a problem if you think you might have to pay to fix the problem and perhaps incur a fine. This may contribute to rural/urban tensions that many agents spoke about. When farmers see themselves as the ones making all of the changes, while urban people are not, they may feel they are unduly burdened.

But the human waste problem in Beth's project was not avoided. They continued to review data coming in from local monitoring efforts, and eventually their understanding of the problem began to evolve beyond finger pointing and on to what might be done. But it took time for individuals in the advisory group to see the bigger picture.

Beth said, "I think the big, the most important change is happening is as each of us as individuals learns more about water quality issues and about the watershed and about this particular creek and about each other then I think our more personal goals are changing. An example I can give you--the very first time a group of students came to the advisory meeting to present their data the only thing everybody looked at, rural, urban or everybody else was where their house is in relation to the creek and everybody looks for their own spot to find how good I did. In fact, at the very first committee meeting, one thing I noticed was that the person who was representing the soybean association said something about 'well since soybeans don't produce manure, it's not our fault.' So immediately a disclaimer about [it's not my group's fault], or just being defensive and now they still look at their own spot, but they also take a look at the bigger picture. That's just something that required an understanding of the bigger picture, so we are getting a better view of it. That was funny."

Partnering with diverse groups was the biggest challenge for agents. Bringing a variety of people into the process was a balancing act that never weighed out perfectly. Bob said, "There are two sides to [partnering] I guess. Overall I'm a big believer in it myself. [But] you can get yourself in a bind on some things if you're not careful...We get accused once in awhile of whatever the term is, getting together with chemical companies or whoever and we shouldn't be dealing with them...I've been told by people that on this [ag business] deal that I shouldn't be promoting [ag business] chemicals. Well I'm not...I mean they invited me over to a meeting and showed me what they were doing...They're educating farmers on how to better manage their chemicals and to me that's the type of people we need to be working with...My reasoning isn't to get [ag business] to come here and plant this grass, the farmer can plant it

anyway. My reason is to sell...the owner of [ag business] on soil conservation and water quality."

Bob wants agribusiness involved because their products are ending up in the municipal water supply. He wants them as partners not just for their support but because they are part of the community and the community has a problem that involves agribusiness. He knows that if he can appeal to their community responsibility, that they will respond by looking for ways to solve the problem. At the same time he has community members who mistrust agribusiness and don't think they should be part of the partnership.

Elton has a similar problem, but has decided to let those who are already participating come to their own conclusion about who should be participating. He said, "[The] local lawn care agency wants to be involved. Obviously because they would like to have the support of the lake association because they want the association to say yes, they're providing a service that isn't hurting the lake or anything like that...I don't think the association is willing to just support any group like that because they want to be involved. They are concerned about what the lawncare agencies are applying to yards and if they're doing it in a sensible manner...They haven't really determined what's right or wrong yet."

In other instances advisory groups grew more diverse by bringing in groups who expressed animosity. Andy said, " [T]ownspeople who like the lake were concerned about a feedlot going into the watershed. They formed a group and approached us. There was so much concern with what we were doing out in the watershed as far as practices...just this one feedlot, that's what got them together...We decided to invite them to our advisory meeting. In fact they are still on board."

Often times, in these instances of rural/urban tensions, city dweller farm tours were organized usually with good success in terms of participation. Dan said, "[W]e're trying to build an understanding between the urban and rural sector and ultimately a partnership...Our theory there is that we've got to educate the non-farm sector on agriculture. They're ag illiterate to a large extent and we see that urban people really need to understand that if they support programs and policies that keep agriculture economically strong, then farmers will invest in conservation. If they're not doing well economically, they will not invest in conservation...As we hold these non-farmer tours, we try to get farmers there to answer questions because not very many people know farmers."

Trust between agents

Trust between agents of cooperating agencies was often spoken about. The notion of agency conflicts was something that emerged entirely on its own. At no time did I ask agents how well they cooperated with other agencies. They elicited it themselves. In only one instance did an agent say their working relationship with another agency was great. This of course does not mean that all agents are unhappy with agents in other agencies, but it does raise the question of how effective partnering with the public sector can be if agents responsible for facilitating partnerships do not have sound partnering going on with fellow agents of different agencies.

Agents were sometimes frustrated that when they are asked to be more participatory at the local level, within agency hierarchies, top-down behavior continued. Randy drew an analogy between paradigm changes in government and similar changes in business. He said, "You know, if you look at private industry...and really looked at how private businesses adjusted to change and

downsized and flattened out the pyramid, you know, so more people are involved in decision making...I've been looking at that for the last ten years and government has to change in that direction, and that change has been slowed by individuals that don't see that as the way to go. And it's just old thinking verses new thinking, that's all it is."

"Old thinking verses new thinking." Ultimately, this means there is someone who's thinking is wrong or outdated. Agents, used to giving people answers to their problems, are now asked to involve people in finding solutions. Some people like Randy are ready to adopt the new thinking because they have been formally trained in consensus building, have utilized those techniques successfully and feel comfortable with the process. Others are not.

Randy's notion of participation differs from those who control the funding of his project and he gets frustrated when they don't play by the rules as he understands them. He said, "We have opposition to local control...From DNR higher ups who control the funding for these projects. Sad to say. Sad to say. It's been a thorn in our side. It's been a problem for us...It's been a problem for a number of watershed or watershed quality projects in Iowa. That they hold so tightly to the funding and do not allow--facilitate local ownership to really take hold and be the owner, the decision makers on the project...It's like 1950s thinking in a 1990s world...[W]hen you're at the top of the pyramid, you don't have to have other people to call the shots, you don't have to accomplish, you're in charge you see and well I can get pretty negative pretty fast on this issue, we've just been through the wars with this and we're being stifled on this, we're just being stifled. And that's the biggest obstacle to doing the work in the watershed."

Other agents were frustrated with a lack of partnering happening at the local level with agents of other agencies. Danielle believes funding mechanisms lead to friction between two agencies. She said, "The money for most [watershed] projects in Iowa is money from the 319 EPA program...That goes to the soil conservation district. The agreement is for that project to be written between the agency [NRCS] and the local soil district. The NRCS serves that district so the coordinator will work from out of the NRCS office. That's the support system. Extension has to be written into the proposal specifically in order to have a formal role and in order to receive any kind of funding. I frankly will tell you that I think too many districts in Iowa, too many counties take extension for granted as a resource. They don't think to include it in their project. Whereas the reality is, extension is becoming more resource limited. Less able to do things not more."

And this disparity was something I came to understand only after I was well into my project and began to notice that contact people for watershed projects were more often NRCS rather than CES by about three to one. So it gradually became apparent that within the structure of a key funding source, one agency could be left out of part of the process if there was not a concerted effort on the part of the NRCS to bring extension into the project early on.

Ellen, a long-time CES agent who lives in her community, is involved in the social side of extension rather than the applied agricultural side. She thought watershed projects should include her expertise because she believed she could bring a perspective to the project that might enhance it. But as Danielle mentioned, she was brought into the project after the fact, so felt she'd rather put her efforts elsewhere where she could play more of an active role. She said, "I was invited to a meeting...I think [the NRCS] has these ideas of what

they want to do, then they try to incorporate us into that. That's how I feel. Maybe being a families person and not an ag background, they don't see me fitting into that...[N]ot because I'm female, but because I'm families trained-- that takes you out of the loop. In a male gender world where they think that you wouldn't have an interest or knowledge you're not included...Other agencies haven't broadened their vision to see that maybe someone who doesn't know anything about this [water quality] could bring something to [a project] because they would question things and look at it in a different way. I think it's the way things are set up."

Ellen did not like being asked to participate late in the game. Her sentiments were similar to farmers when they were asked to participate without meaningful involvement. Even so, Ellen agreed to help out on a special urban component to the project. She worked on getting a grant to fund it and helped implement the activities. But in the end she felt burned because she didn't believe she and her agency had been given credit. She said, "It's interesting, we got the grant and did the work for that, [special urban watershed project] but the latest information out there doesn't have our phone number on it."

Extension got the grant, but to Ellen the NRCS didn't give them the credit she thought they deserved. Ellen basically washed her hands of the watershed project. She said, "That doesn't mean I don't believe in it or that I'm not interested in it, but I have my plate full of these things and if you haven't been asked to be involved in it...I have really not been included in a lot of follow up meetings."

Similar problems arose in other projects. Tensions existed because agent roles were never formally defined. There were assumptions made about who would do what, there were fundamental differences between agency

philosophies and there was a failure to handle public information in a way that all agency agendas were met.

Jim found agency philosophies varied as to how goals could be reached. He said, "I would always ask questions the first season, 'what are we supposed to do about this' and my boss...their message to me was different than when I would visit with NRCS and the interpretation of the rule in particular the incentive programs, so I was, at best I was very confused."

Also working on the project was Andy. He saw some of the problems of communication due in part to geographical factors and, like Jim, due to philosophical differences between the agencies. He said, "It's hard to keep everybody informed to keep things going on an even keel. We've got an office over here and they have an office over there and the ASCS is over there doing their own thing. [And we] still have a different message that we receive from above. It's just different like two different families. You can't try to tell them [extension] to do the same. They get a different message on what they're supposed to be doing. How they are supposed to be dealing with people."

Geographical distance between agencies might have been less of a problem with the advantages of E-mail, but typically the NRCS did not have Internet access and were still using 80s computers. Extension, on the other hand had up to date computers and Internet access.

Andy feels the whole partnering notion on the agency level is not working out like agents higher up in the two organizations seem to believe. He said, "[W]e go to these regional meetings...we always hear this good news story... [that] we're working together...You come back here and it's different...There is a little protection that 'this is my deal here. You don't touch.' There isn't always consensus about the right way to do something between agencies."

So Jim and Andy understand there are philosophical differences between their agencies, but they don't necessarily know how to resolve those differences. This led to problems with their working relationship which deteriorated over time. Jim said, "In the past we've always--we were an excellent match. His strengths are my weaknesses and vice versa...We could each talk the other's part, but we knew we seemed to just develop the knack of division of labor and that worked well. [Then] one of the local ag businesses...made a decision to start [precision farming] in this local area. Andy really jumped on that and organized a program then he asked me well do you want to participate in it as part of the project. It's too late...Up until that time he and I got along great."

Two things were happening here. First, Jim like Ellen, felt he had been asked late in the game to participate and felt his participation at that point was not genuine. In addition, there were agency philosophical differences about how to go about adopting precision farming so Jim felt he and his agency's perspective could not be incorporated into the process at this late stage.

In this project, public information was to be handled by extension. But here Andy, like Ellen, felt his agency was not getting the acknowledgment they deserved. He said, "That [public information] position is an extension position and to me I don't know if that's the way it should be. It should be somebody that is right in the middle." Andy felt powerless to get his agency's information out to the public via extension. This sense of powerlessness may have led Andy to jump on the precision farming project with agribusiness without working with Jim. Their level of mistrust increased with each incident.

Jim said, "[T]he communications specialist is stationed here and I kept her busy just with the newsletter and getting things up and running doing field demonstration brochures, writing news releases...[I]t's my concept of this

communications position is that...everything PR wise should have been going through her. It was my idea of the concept. DNR wouldn't do that, if they wanted something released they would just do it. NRCS, basically it was NRCS and us that did newsletter types of things. I feel NRCS was a little bit frustrated because [she] never had the time to do their stuff. They never really said that, but I know that...They ended up doing it [press releases] themselves...Conceptionally I thought all that stuff should have been coming through here so we'd get a uniform story coming out on the project."

Now, each agency was sending out press releases to the public telling the story from their perspective. On one hand, the public was told about how agencies were working together and at other times the public was told about how one agency was working on the project. Agency folks were working harder than they needed to if cooperation and coordination was occurring.

Trust between agents and agribusiness

Both the CES and the NRCS have had changes in their agency's roles. A focus on structures and increased yields has moved towards conservation management practices such as BMPs, ICM and nutrient and pest management.

Bob said, "We're kind of a terrace organization...[I]n the past we've always...measured in feet of terraces that we built. Now that is changing to more management type things with our pesticide problems...[W]e always had these management type things but we never really promoted them like we are now."

Similar changes have occurred within the CES. Here too there is a movement towards assisting farmers with adoption of conservation management practices, from one that focused primarily on increasing yield. With conservation management practices, farmers now have to be sold on the adoption of management practices because it *saves* the farmer money, and at

the same time benefits the environment. This is a very different thought process than one of adopting a practice because it's going to *make* you money by increasing yield.

Now, NRCS and CES are actively competing with each other for farming clients who will work with an agent on adoption of management practices. Complicating this is the fact that each agency takes a little different approach towards conservation management practices. Typically the CES promotes ICM, while the NRCS promotes nutrient and pest management. NRCS ultimately has the responsibility to determine if conservation management practices have been carried out.

Complicating the problem further, is the need to include agribusiness in the promotion of conservation management practices because, as a number of agents pointed out, surveys show that many farmers get most of their input advice from their dealers and coops with NRCS and CES further down on the list.

This adds still another perspective because agribusiness typically promotes BMP's. Agencies are now asking agribusiness, which has logically focused its profits on sales, to now include services that often, although not always, mean fewer sales.

Both NRCS and CES try to involve agribusiness by inviting them to meetings or demonstrations on nutrient and pest management or ICM, but they have not been happy with the results. Jim thought highly of agribusiness as a whole until he found out some did not have the training he felt was necessary to carry out the services for ICM. He said, "We want to demonstrate the ICM principles and concepts to the ag business sector...Personally for me personally, that's been a very poor thing for me to do simply because I held the ag business

personnel in high esteem prior to coming into this position--I held them in high esteem--Wake-up call. They're not all professional and they're not all trained nor well qualified to be doing the things they are. So that was a wake up call to me."

Linda was also frustrated with the way agribusiness provided ICM services. She said, "We try to involve them [agribusiness]. We tried real hard. Last year we had quite a few meetings to try to educate them on the process of ICM--to try to inform them of this is the minimum requirements that are needed for the people you work with for them to get their incentive payment. You walk them through that first year. I would say ag business is getting better, but they're very poor at pulling everything together for record keeping. It's not in their nature. It's still product sales. How much feed can you sell. How much nitrogen can you sell. How much PNK."

We can only speculate on the frustration agribusiness has experienced based on the frustration NRCS and CES agents experienced because of philosophical differences. For agribusiness, they not only find themselves receivers of information for something they have already developed an approach to called BMPs, but now they are being asked to learn two conservation management approaches, that of the NRCS and that of the CES. The turf is being trampled by three diverging paths.

Linda said, "If government can't get ag business to have the same agenda they have, which is basically the situation that we have today--Ag business has their own agenda. Government and environmental people have their own agendas--Maybe the best we can hope for in that situation is a meshing through incentive programs working through the producer and letting that producer be

informed and educated. Not only by ag business, but by government and extension and research people."

Farmers must be the most frustrated of all when it comes to mixed messages about conservation management practices. Not only do they have to unravel two messages like agribusiness and agents do, they have to unravel three messages. When we are faced with mixed messages we tend to throw up our hands in frustration, or choose the path of least resistance, which may not be the best choice for the environment or even for profits, but at least we don't have to make any radical changes. Why take a risk if even the experts can't come to a consensus?

Finally, conservation management practices have another pitfall for both agents and agribusiness, which is balancing farmer trust with compliance. With some flexibility, farmers are expected to carry out conservation management practices written up in their yearly plan if they expect to receive incentive payments. Jim said, "If they do not follow the ICM plan they do not receive their incentives...It's up to them to follow and to implement [the plan]. If an ag business firm was to provide these ICM services and the farmer's receiving an incentive, what ag business is going to write a report to NRCS saying the farmer did not follow his ICM plan? I shouldn't say ag business, what about me!? How am I going to build trust when we promised the farmer all this money...when at the end of the year we say well you didn't follow the recommendations so you get zero. That's a dilemma for the folks in the field."

CONCLUSION AND EXTENSION

I have attempted to understand how the notion of bottom-up participation is understood, experienced and implemented by local change agents for the purpose of exploring communication research that responds to participatory initiatives.

I have learned that participation varies from watershed to watershed falling along a continuum from ritual to authentic. Participation varies for many reasons including perceptions, philosophies and life-experiences. When I began this study, I was thinking primarily about participation as it relates to interactions between agents and communities. Along the way I found out participation has many more dimensions.

The model on page 23 illustrates possible scenarios that a participation paradigm expansion can take. Thus, it is not surprising that each watershed project is unique. But common themes emerge that are of particular interest within the framework of deliberative democracy and collective action.

Collective action can come about through regulation or voluntary participation. Regulation can bring about change quickly, but sustaining that change over time may be difficult. Human beings make permanent changes based on new knowledge that they have time to process and incorporate into their own life experience that makes sense to them.

> In the learning process the only person who really learns is s/he who appropriates what is learned, who apprehends and thereby re-invents that learning; s/he who is able to apply the appropriated learning to concrete existential situations. On the other hand, the person who is filled by another with "contents" whose meaning s/he is not aware of, which contradict his or her way of being in the world, cannot learn because s/he is not challenged. (Freire 101)

A deliberative process allows interactive learning to take place and increases the chances for developing shared social norms. Even those projects

that were more regulatory had some element of learning taking place and most projects had multiple learning dimensions. Agent experiences lend support to the ideology of deliberative democracy, but there are systemic constraints that prevent learning from taking place, which boils down to trust.

Trust seems to be a key factor for deliberation and thus effective communication and learning to take place in watershed projects. Trust reverberates interactively over time between and within institutions, change agents, stakeholders and the community as a whole. Interactivity can be negative and/or positive. When there are many networks of positive interactivity, synchronicity occurs. While there are elements of randomness in synchronicity that have to do with place, history and timing, there also seems to be actions people take that taps into its momentum.

A positive network of interactivity and learning can begin with cooperating agencies. This point has been well demonstrated in the Big Spring watershed project in northeast Iowa. Big Spring is considered, on a national level, to be one of the most successful partnering projects in watershed management. Before beginning the project, agencies sat down together to sort out their areas of responsibility and authority and expertise.

> We put the turf on the table...and we tried to avoid finger pointing. And there wasn't any clear cut programmatic definitions in place. Ours was a consensus process: here is the turf - our different institutions' responsibilities; this is what we want to do, you know how to do it best, you ought to be in charge of that component. The point we were trying to get across is that there is absolutely no point or possibility for success, if we get the money and it is hoarded by one agency. The most positive sign that we were on the right track is when members of the group actually got money from their own agencies to give to other members, because they knew those agencies needed it...That became the rallying point. We all had to work together to find the resources. So the issue was not to fight over turf. But to figure out the turf - put it on the table, to figure out how agencies really did relate to the issue. (Mueller 14)

The focus of the project from the beginning was on the means, not on the end. "[M]ost important to keep in mind is the *process* behind the work. Where that chemistry is present, any consortium...will have considerably greater chance of success" (Mueller 25, emphasis in original).

The Big Spring project supports the notion that success depends on process as well as end results. But funding seems to be operating in a top-down fashion that requires end results. Funding that emphasizes time for process to take place as well as end results may help to support long term change especially in communities where synchronicity is lacking.

As one CES agent said to me, "We are told we are expected to cooperate and yet typically I don't think people's jobs or people's lives contain very many instances of partnering." By going through a process where agents are learning new knowledge interactively, they are better able to integrate it into their lives. Potentially, they can then extend their experience through similar processes into their watershed community.

Time for process was expressed repeatedly by agents. Learning and action depended on reducing tensions within their community. Many were able to create some opportunities where dialogue could occur, but time constraints limited this. The formation of diverse stakeholder groups was particularly effective for developing interactive learning. Synchronous events often helped to bring these groups together. Those with training and/or personal philosophies that supported consensus building were most successful at bringing groups together when synchronicity was lacking.

Once groups were established and immediate goals met, the biggest problem for agents was to maintain momentum. One agent and advisory group dealt with this problem by intentionally setting up rotations and term limits in a

way that kept the group stable yet evolving over time. This process meant new dialogues between networks of social groups, thus potentially expanding shared norms out into the community. Other projects rode the synchronicity wave for as long as it lasted.

Perhaps synchronicity exists, in part, when a community's social capital is high. Theoretically communities draw on existing stocks of social trust, shared norms and networks when collective action is needed. Beyond the power of incentives, agents' experiences support the notion that trust between networks of community members is important for implementing conservation practices.

Communication research supports this notion both qualitatively and quantitatively. Both approaches can bring greater understanding to notions such as social capital, deliberative democracy and bottom-up participation that are as much ideology as they are theory.

For example, public journalism is one form of qualitative communication research that facilitates dialogue among communities in order to enhance the deliberative democratic process necessary for these devolutionary times. Many examples have shown public journalism to be effective in bringing about understanding among diverse publics. It would be interesting for newspapers in a watershed community to incorporate public journalism into a watershed project.

Network analysis is a quantitative example of communication research that helps to understand how information by word of mouth moves through a community. This would be helpful in understanding social capital. While some in the participatory communication movement see this as "only distantly related to participatory processes" (Jacobson 270), others believe dialogical

movements depend on more research about information flow through social networks.

> The dialogical model demands a thorough knowledge of social heteroglossia in the development system. This requires detailed information on significant social groups and communities and their structural relations: economic, social, and cultural activities and events constituting their normal life patterns; agents and institutions through which they represent and communicate their worldviews and values; their regular or occasional communication links with each other; and sociolinguistic peculiarities of their verbal and nonverbal behavior...For this kind of information the dialogical approach needs research support from the social sciences. (Rahim 135-136)

On a mass communication level, critics of information campaigns do not see research into centralized processes in this area as leading to participatory processes.

> It is one step to say that, contrary to the amount of power typically exercised by institutions, individuals or publics should have equal power in an interaction with an institution. It is quite another to suggest, as is being suggested here, that institutions should not have a right to as much power as people, that is, that institutions have no right of dialogue, but that people do with other people. Only when institutions are subordinated to the public can we entertain the possibility of authentic discussion, the necessary basis for genuine democracy. (Rakow 180-181)

But decentralization "is not an absolute good in its own right" (Servaes, Utopia 104). It can be used as a means to an oppressive end just as a centralized approach. Centralization, in its most beneficial form, serves to reinforce national unity and frees a population from certain responsibilities, such as maintaining law and order, transportation, education and other services.

> Institutions are established in order to provide these services collectively. But the degree of centralization must be controlled: where all decision making domains disappear, the individual is left powerless and passive...Thus, there is a great complexity in the interrelationship between centralization and decentralization... (Servaes, Utopia104).

This complexity is especially evident regarding NPS pollution. Here we have a situation where individual actions on privately owned land are causing problems on collective resources. A centralized approach is needed to initiate

an overall plan of action to perform services because there are limits to voluntary participation.

As this study began, "The care of Rivers is not a question of Rivers, but of the human heart." Many human hearts are needed to solve the problem of the hypoxic zone and all of the local watershed problems that contribute to it. To address this, a paradigm expansion in public policy that is moving towards more bottom-up participation is occurring. A similar paradigm expansion in scientific research is also occurring. Perhaps these movements will result in greater synchronicity.

APPENDIX A. ACRONYMS

USDA - United States Department of Agriculture

FSA - Farm Service Agency, USDA (formerly CFSA - Consolodated Farm Service Agency and formerly ASCS - Agricultural Stabilization and Conservation Service) Sets up contracts with farmers and administers cost share funds.

NRCS - Natural Resources Conservation Service, USDA (formerly SCS - Soil Conservation Service). Develop conservation plans with cooperating farmers and assist with the on-farm implementation. Focus is on soil erosion, manure utilization, structural measures i.e. terraces, grass waterways, buffer strips and nutrient and pest management for row crops. May be involved with pasture management. Incentives are typically associated with implementation of conservation practices adopted by the farmer.

SWCDs - Soil and Water Conservation Districts. There is one SWCD board per county. Board members are locally elected. Typically housed in the NRCS office. NRCS staff advises, supports and implements conservation initiatives cooperatively with board members.

CES - Cooperative Extension Service, State Universities. Assists with integrated crop management (ICM) and information/education outreach. Incentives are often associated with implementation of conservation practices adopted by the farmer.

IDNR - Iowa Department of Natural Resources.

IDALS/DSC - Iowa Department of Agriculture and Land Stewardship/Department of Soil Conservation.

CCBs - County Conservation Boards. There is one five-member CCB board per county. Board members are appointed by the county board of supervisors for five year voluntary terms. The board hires an administrative director who, in turn, hires supporting staff and executes programs. All CCBs are involved with the county park system and may also specialize in programs such as education, trail construction, historic preservation and/or wildlife preservation.

ICM - Integrated Crop Management. A term that has arisen out of academia particularly researchers from plant pathology and entomology. Built up from work beginning in the 1940's and 1950's. Takes a holistic approach by adjusting inputs based on a whole farm system that considers buildings and equipment soil, water, air and domesticated or wild plants and animals as opposed to adjusting inputs solely on the needs of row crops. Requires a high level of management skill and record keeping. ICM is something the farmer can learn

to do, can hire out from agribusiness, cooperatives or independent service providers, or as part of a conservation incentive program through CES.

BMPs - Best Management Practices. A term that has arisen out of industry primarily from fertilizer companies as a response to public concern in the 1980s about environmental impacts of agriculture. Their philosophy is the ecological impact of agriculture is no greater than any other human activity when pesticides and fertilizers are applied at levels which industry has tested for.

NPS - Non-point source pollution. Sources can be traced to the accumulation of daily individual actions. NPS pollution accounts for 80 percent of the degradation of the nation's water.

PS - Point source pollution. Sources can be traced to a specific industrial or municipal waste pipe or to a toxic waste site.

APPENDIX B. CONSENT FORM

Research on Communication Strategies in Watershed Campaigns involving Public Participation
Letter of consent
Spring 1996

Re: Letter of consent

To assure Iowa State University that you have voluntarily agree to participate, your signed consent is required:

I understand that the nature of the data for Corrin Seaman's research is qualitative, therefore, she will tape-record open-ended interviews. Recordings of interviews will be used for thesis research only. Any data that I provide will be kept confidential. Identifiers on tapes will be destroyed in September 1996.

_____ _____

name of participant today's date

APPENDIX C. AGENCY INTERVIEW GUIDE

How many land owners in the watershed?

Farm-What kind of farming?

Non-farm-What kind of non-farming?

History of public participation projects?

How was the role of the public defined?

Who was involved in defining public participation?

What were the goals of involving the public?

At what stage of the project were public participants involved?

Who were they?/What did they do?

How did you ensure public got involved where public participation was desired?

How did the public learn about the project?

How did they learn they could participate?

What assured you public was participating and participation was acheiving goal?

What were the results of public participation?

How has participation changed over the life of the project?

How did you perceive landowners in the watershed thought about the project?

How did farm/non-farm landowners view each other in terms of water quality?

Were there perceived dissagreements?

What sorts of technical or social solutions are important for solving watershed problems now and in the future?

What role do you think communication could play to improve future watershed campaigns?

I hear alot about partnerships. What do you think about this? Who would you look for as potential partners?

APPENDIX D. FUNDING SOURCES

Rural Clean Water Project (RCWP): (1980-1990) The first national program designed to control agricultural nonpoint source pollution in rural watersheds. USDA funded, ASCS administered. SCS, IDNR and CES also offered assistance. Cost-share funds for BMPs including terraces, animal waste management systems, conservation tillage and nutrient (BMP 15) and pest management (BMP 16)

Hydrologic Unit Area Projects: (1990-91) USDA funded, NRCS administrated. CES and CFSA also offer assistance for the three to five-year projects. The majority of projects received additional funding extensions to seven to eight years. Cost-share funds are limited to $3,500 annually.

Iowa Publicly Owned Lakes Program: (1973-current) State-funded, IDALS/DSC-administered. May provide cost-share for permanent soil conservation practices installed above priority lakes or reservoirs identified by the IDNR.

Section 319 Program: (1990-current) EPA-funded, IDNR administered. Provides funding for staff positions, demonstrations and implementation of water quality practices.

REAP Water Protection Fund Program: (1989-current) State-funded, IDALS/DSC-administered. Provides funds for technical assistance to projects as well as structural and management measures.

Agricultural Conservation Program (ACP) Water Quality Special Projects: (1994-1996) USDA 94/CFSA 95-96-funded, CFSA administered. Provides up to $3,500 cost-share for practices such as sediment control and animal waste management systems.

Clean Lakes Program: (1975-1995) EPA-funded, IDNR administered. Targets pollution-damaged publicly-owned lakes for protection and renovation. Established by the Clean Water Act of 1972. Cost-share dollars for land treatment may be available.

Water Quality Incentive Projects (WQIP): (1992-1996) USDA 94/CFSA 95-funded, CFSA administered. Provides maximum #3,500 annual incentive for three years for water quality improvement management practices. Designed to work along with existing water quality project areas.

The preceeding was compiled from the following sources: Mueller, Brown, IDNR and Link

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