WATER
WATER
WATER
WATER
WATER
WATER
WATER
WATER
WATER
WATER

Environment
Crises

By
Russell R. Dynes
and
Dennis Wenger

**State of Ohio
Water Resources Center
Ohio State University**

ENVIRONMENT CRISES

Project Completion Report

Russell R. Dynes
Department of Sociology
Disaster Research Center
The Ohio State University

and

Dennis E. Wenger
Department of Sociology
University of Delaware

Part A: Dimensions of Community Leadership
and the Definition of Water Resources Problems

by

Russell R. Dynes
Department of Sociology
Disaster Research Center
The Ohio State University
and
Dennis E. Wenger
Department of Sociology
University of Delaware

Part B: Factors in the Community Perception
of Water Resource Problems

by

Russell R. Dynes
Department of Sociology
Disaster Research Center
The Ohio State University
and
Dennis E. Wenger
Department of Sociology
University of Delaware

Part C: A Sociologist Looks at Water
Resources Research

by

Russell R. Dynes
Department of Sociology
Disaster Research Center
The Ohio State University

PREFACE

This report consists of three different parts. Part A reports certain aspects of research which was done in four Ohio communities. The leadership pool within each of these communities was asked to consider water resource problems in the context of other problems within their community. The study indicated that, even in communities with objective problems, water resource problems had low urgency.

Part B presents a paper based on the research reported on in Part A. This report was presented at the North American Water Resource Conference, Las Vegas, Nevada in October 1970 and was published in the Water Resources Bulletin 7, no. 4 (August 1971): 644-651.

Part C presents a paper which was delivered at the Second Annual Water Resources Colliquium "Social Sciences in Water Resources Research," June 1968 at Pennsylvania State University, University Park, Pa. and was published as part of the Proceedings, Information Report No. 57.

This research was supported by the Office of Water Resources, U.S. Department of Interior (Project B-012-OHIO), through the Water Resources Center of The Ohio State University and is submitted as the final report.

CONTENTS

LIST OF TABLES

Part A:

Dimensions of Community Leadership and

the Definition of Water Resources Problems

Introduction

There is growing concern in the world over the relationship between human social organization and the physical environment. The "ecological crisis" in the United States is no longer simply a point of discussion and distress to ecologists, hydrologists, and other scholars. It has become a salient public issue. As a "cause" it has served as a rallying point for such diverse groups as students, politicians, housewives, academicians, clergymen, social commentators, and industrial leaders. Such environmental problems as water and air pollution, energy and resource depletion, conservation, and congestion have become defined as being "disastrous." Their effects are viewed as being potentially more damaging than the strongest hurricane, earthquake, or tornado. Technological advances are being made in an attempt to prevent and assuage these deleterious conditions. Finding solutions to these problems, however, also requires the analysis and involvement of social organization.

An understanding of how the community in general, and the members of the community who hold social power in particular, perceive, define, and attempt to solve these types of problems is requisite if any proposal for ameliorative action is to be successful. The power actors are those individuals within the community's "leadership pool" who control the resources with which to aid or abett any attempt to solve these vital problems. Therefore, the extent to which they are aware of these problems, the nature of their perception and definition of these problems, and the types of action they propose to solve them are issues of relevance to anyone attempting to institute ameliorative action in the local community.

These and other issues were examined by the Disaster Research Center in a study of community reactions to these types of problematic conditions. These problems were considered to be collective stress situations similar to natural disasters and civil disturbances. Utilizing a sociological framework the Center has defined collective stress as a large, unfavorable change in the inputs of a social system.[1] Since 1963 the Center has been engaged in the study of collective stress conditions caused by the rapid impact of stress-inducing agents such as hurricanes, explosions, tornadoes, and earthquakes. Scores of studies of disasters and civil disturbances have been conducted within the continental United States and in several foreign countries. Due to their rapid onset and limited, temporal duration, these conditions have been classified as short term stress-inducing situations. As opposed to the types of problems, however, the present study will examine long term collective stress situations.

The specific long term stress-inducing agents selected for study were the water related problems of pollution, depletion, and flooding. These types of problems are ideal for an analysis of community perception and response. Their nature is one of gradual onset and extended duration. As opposed to sudden impact agents, such as natural disasters, they allow the opportunity for planning and action to cope with their stress-induced situations. On the other hand, because of their nature they are more difficult to perceive by community members. Due to their gradual onset, communities may adapt to and come to accept their presence. Obviously, the perception of stress is a necessary condition for planning and action. The extent to which the power actors in the community perceive these problems to exist, and the nature of their problem-definitions and action-proposals are the central concerns of this study.

Specifically in this report we will examine three issues. First, we will analyze the nature of the "leadership pools" perception and definition of water related problems as compared with other general community problems. Of particular concern will be the extent to which objectively present water related problems such as flooding and pollution are salient to the community's power actors. Second, the types of action offered by the power actors to solve water problems and other general problems will be compared. Finally, social factors impinging upon these perceptions and definitions will be considered. Specifically, we will examine the effect of (1) a disaster culture and (2) the structure and distribution of social power in the community upon these dimensions.

Before turning to these issues and a discussion of the methodology utilized in this study, the key concepts employed in this examination will be briefly defined.

The Basic Concepts

A. The Leadership Pool

We shall define as the leadership pool those components of any social system, be they individuals, groups, or organizations, that are identified as possessing superordinate social power and the ability to affect the processes in the system.[2] For practical purposes, the concept of the "leadership pool" is synonymous with the concept of the "power structure." Basically, the leadership pool is composed of those actors in the local community who hold superordinate social power. By "social power," we refer to the ability of a system component to actualize its interests (attain goals, prevent interference, command respect, etc.), whether consciously or unconsciously, within

the context of asymmetrical relationships within the system and thereby affect the processes in the system.[3] To control social power assumes the control of vital power relevant resources, such as money and credit, jobs, mass media, high social status, knowledge and specialized skills, popularity and esteemed personal characteristics, legality, manpower and control of organizations, etc.[4] Individuals who control such resources have the ability to aid or abett any attempt to change the local community or solve local problems. These individuals are power actors. How do they perceive water problems? Are they aware of existent water related problems in their communities? What type of action do they propose to solve these problems? These are important questions to anyone who is attempting to institute change within the local community and solve local water related problems.

The power actors, however, do form a group within the local community, and the characteristics of this "leadership pool" and the nature of the inter-relationships among the power actors are important factors. It has been previously shown that the characteristics of the leadership pool affect the perception and definition of community problems by the power actors.[5] Specifically, leadership pools can be described and analyzed along the following characteristics: (1) size, (2) institutional dominance, (3) social class level, (4) legitimacy, (5) visibility, (6) scope, (7) cohesiveness, (8) entrenchment, and (9) cosmopolitanism.[6] Size refers simply to the number of individuals within the community who are identified as possessing superordinate social power. The concept of institutional dominance refers to the extent to which a single institution within the community, such as the economic, industrial, political, or educational institutions, dominates the local leadership pool. In certain communities, the economic institution may be dominant, while

in others power may be inordinately controlled by the political institution.
The average occupational and educational levels of the community leadership
are included under the concept of _social class level_. The next four dimensions
were developed by Thomas J. Anton.[7] _Legitimacy_ refers to the extent to which
the local power actors hold public or associational office. _Visibility_ taps
the extent power actors are "visible" to the community residents, as opposed
to covert, "behind-the-scene" manipulators. Whether or not the leadership
pool is composed of power actors who hold power in only one institutional area,
such as education, or are "powerful" in many different institutions is tapped
by the characteristic of _scope_. Where a leadership pool is characterized by
"narrow scope," power is institutionally specific in nature, and the power
actors exercise power in only one or a few institutions. _Cohesiveness_ refers
to the degree and nature of interaction among the power actors in the leader-
ship pool. The actors may exhibit a high level of interaction, or they may
be relatively isolated from each other. _Entrenchment_ refers to the extent to
which the leadership pool has been embedded in the community. Basically, it
is a measure of the proportion of their lives that the power actors have spent
in the community. Finally, _cosmopolitanism_ refers to the extent to which the
leadership pool is characterized by "cosmopolitan," as opposed to "localite"
attitudes and interests. A "cosmopolitan" may live in the local community,
but he identifies and relates himself to issues, events, and social organiza-
tion in the broader national and international milieu. A "localite," on the
other hand, is parochial. His interests are confined to the local community.
It is a basic assumption of this study that these characteristics of the
leadership pool will influence the manner in which the leadership pool per-
ceives and defines local water related problems.

B. Community Problems

We shall define as community problems those current or future conditions perceived to be present or likely to occur within the community social system that are defined by power actors in the leadership pool as being dysfunctional and requiring amelioration, whether or not the conditions can be ameliorated.[8] To be considered as a community problem, therefore, a local condition must (1) be perceived to be existent within the community, (2) be defined by the power actors as being detrimental, pernicious, baneful, or deleterious to the community, and (3) be defined by the power actors as requiring some measure of activity to solve. Whether or not the conditions can objectively be solved is relatively unimportant. We are interested in those problems for which the community, influenced by its power actors, will institute ameliorative action. In this study we will be interested in examining a specific type of community problem, i.e. water related problems, and comparing this type of problem with other types of community problematic conditions.

As previously noted, the concern here is with the salience and nature of the power actors definition of water and general community problems. These problems will be examined in light of the following dimensions: (1) salience, (2) degree of severity, (3) degree of consensus concerning the level of severity inherent in the problem, (4) the extent to which the perceived problems are viewed as solvable by the local community, (5) the degree of uniqueness of the problems, and (6) the degree of clarity in the definition of the problems.[9] The dimension of salience refers to the extent to which objectively present problems are perceived by the power actors to be inherent in the community. In this study we will examine communities that objectively have flooding and water pollution problems. The central question is,

-8-

"Do the power actors perceive these problems to be existent in the community, are they aware of these problems, are these problems important to them?" The degree of severity of the problems is a crucial dimension. Ameliorative action is likely to be undertaken to solve those problems that are defined by the power actors as being severe, as opposed to those which are viewed as not being serious. The degree of consensus evidenced by the power actors about the severity of the problems, however, is also important. If the power actors in the community are not in agreement about the severity of a problem or a set of problems, ameliorative activity is less likely to be undertaken because of the problems involved in coordinating action, allocating resources, and exchanging information under such conditions. The fourth dimension is also important. The power actors may perceive that certain problems simply cannot be solved by the local community at the local level. Such conditions may require the involvement of outside, regional, state, and national units who possess vital, requisite resources in order to be solved. If one is interested in understanding the possibility and probability of successfully implementing a program to solve any local problem, knowledge of this dimension is crucial. The degree of uniqueness inherent in the problem refers to the extent to which the local power actors see the problem as being unique to their own community, as opposed to being similar to other problematic conditions found in neighboring or comparable communities. Finally, the clarity of the problem definitions offered by the leadership pool refers to the extent to which the power actors define the problems in specific cause and effect terms. This dimension is very important. If the leadership pool of the community perceives and defines specific causes of the problem, the possibility of successful amelioration is increased. If the leadership pool exhibits a lack of

understanding about the causes of local problems, however, successful amelior-
ation is problematic. There is simply no salient visible, understood causal
agent against which to act.

From the above brief discussion, it may be evident that the major
criterion for the selection of these specific dimensions was their apparent
relationship with the type and nature of action that might be proposed to
ameliorate the local problems. In other words, the attempt was made to
include dimensions whose configurations would affect the nature of the action
proposed by the leadership pool to solve the problems. In addition, dimen-
sions were selected which might be influenced by the previously noted charac-
teristics of the leadership pool. We will compare water related problems and
general community problems on these dimensions shortly.

C. Community Action

We shall define as community action those <u>activities or inactivities</u>
<u>that are proposed by the leadership pool, require local community involvement,</u>
<u>and are offered to ameliorate perceived community problems and thereby affect</u>
<u>the structure and processes in the community.</u>[10] We are interested in both
proposals for action and inaction. The decision <u>not</u> to undertake ameliorative
activity to modify a condition defined as problematic is important, and occurs
in all systems. By our definition, however, community action, when proposed,
must require the involvement of the local community. This criterion does not
mean that the community must be primarily responsible for undertaking amelior-
ative activity, only that it be involved. Primary responsibility may lie
with outside agencies. Furthermore, we will only be concerned with those
proposals for action that are truly ameliorative, i.e., that are offered to
solve local problems. Other types of action are beyond the scope of this

study. Finally, it is noted that the solution to any problem within the community affects the structure and processes of the community. In other words, ameliorative action is an agent of change.

Any type of ameliorative activity, be it an attempt to eliminate pollution in a local stream or to rebuild the downtown business district, can be examined and analyzed among the following patterns: (1) the urgency or immediacy of instituting the proposals, (2) the degree of institutional coordination required to successfully implement the program, (3) the degree of public versus private responsibility for action, (4) the perceived relevance of local organizations, (5) the proposed degree of external, non-local involvement in the ameliorative action, (6) the perceived possibility of "blockage" by one of a few power actors, and (7) the level of inactivity.[11] An important pattern of any action proposal is the urgency or immediacy perceived to be requisite if a successful solution is to be obtained. Some solutions may have to be undertaken "immediately," others may be postponed "indefinitely." Obviously, this pattern is an important determinant of the probability of successful amelioration. Urgency is likely to beget activity. The degree of institutional coordination required to successfully implement the program is another crucial dimension. Certain problems may be "solved" by a single institution, working independently. A problem may be defined as purely being an educational, governmental, or cultural issue. Other problems, however, may be defined as requiring the involvement and coordination of various institutions within the community. The problem of urban renewal, for example, may be perceived as requiring the involvement of the governmental, economic, industrial, educational, and financial institutions. This pattern is an excellent indicator of the complexity of any proposal. As such, it provides

useful information concerning the probability of successful implementation.

Complex problems requiring coordinated local action may be difficult to

solve. Furthermore, the degree to which the action proposals are defined as

being public or governmental concerns as opposed to private matters is very

important. Of course, a problem may be defined as being both a public and a

private issue. The extent to which a proposal is defined as solely a public

or private concern, however, is most critical. Questions concerning legality,

tactics, strategies, etc. are involved. Furthermore, this dimension is also

an indicator of the probability of successful implementation. For example,

if social power in the local community is inordinately controlled by the econ-

omic and industrial institutions, those problems that are viewed as public or

governmental issues are not as likely to be successfully solved as those

defined as economic or industrial matters. By holding subordinate social

power and thereby lacking certain vital power relevant resources, the "public

sector" is at a definite disadvantage in attempting to undertake ameliorative

action.

Another crucial dimension concerns the perceived relevance of local

organizations. Organizations within the community control vital problem-

solving human and material resources. Certain action proposals may be per-

ceived as requiring the involvement of local organizations; others may not.

Due to the inclusion of vital resources into the problem-solving process,

the former proposals are more likely to result in successful implementation

than are the latter. In addition, which specific organizations are viewed

as being involved is also important. Organizations, like individuals, differ

in their control of power relevant resources. When the more "powerful"

organizations are not defined as being relevant to an action proposal, the

possibility of successful implementation is lessened. The <u>degree of external,</u> <u>non-local involvement</u> in the action proposal refers to the perceived extent to which the local community requires outside help to solve the problem. This dimension is an indicator of both the complexity of the issue and the problem-solving ability of the local community. If outside help must be sought, immediate and successful action is problematic. The concept of "blockage" refers to the extent to which the power actors perceive that individuals and groups within the community may stall or defeat the ameliorative action. If the proposal has a high probability of being "blocked" by those in the community, not only is its probability of success lessened, but there may be a tendency to <u>not</u> undertake the proposal at all. Finally, the <u>level of inactivity</u> refers to the degree to which the power actors (1) propose no action to solve a problem, or (2) define that no action has been undertaken to solve a problem. This dimension may be considered as an indicator of the likelihood of successfully implementing any proposal.

The proposed solutions to water related problems and other general community problems will be compared on these dimensions shortly. At this time let us simply note that these dimensions are important because of their relationship to the probability of successful implementation. Furthermore, the previously mentioned community problem dimensions would appear to affect these patterns of community action.

D. <u>Disaster Culture</u>

In this study we will specifically consider the effect of a disaster culture within a community upon the community leadership pool's perception and definition of flooding problems. The concept of disaster culture refers to the <u>actual or potential adjustments, be they social, psychological, or</u>

-13-

physical, which are used by the residents of disaster-prone areas in their
effort to cope with disasters which have struck or which tradition indicates
may strike in the future.[12] The concept has normative and technological
elements. Such adjustments range from the building of physical safeguards
such as levees to the belief that certain areas are immune to particular kinds
of danger and to the cultivation of certain types of attitudes of "defiance
of nature" and "community self-sufficiency" in the face of such stress.
Disaster, in certain communities, may be expected, and its response institu-
tionalized within the local system. Some communities have even been known to
"love" their disasters, viewing such events as floods as simply nuisances,
or possibly even looking forward to the flood period as a time of "carnival."

The existence of a disaster culture in a community would appear to
affect its perception and reaction to such long-term stress agents as flood-
ing. Such attitudes may militate against more rational planning for flood
control and may minimize the community's awareness of the need for concern
and planning for other problems.

The development of a disaster culture, however, is unique and seemingly
occurs only in situations with recurrent and obvious collective stress. One
community may be unaware of objective indications of serious problems such as
depletion and pollution. Another may be involved in active planning by a "few
concerned" citizens. Another may be involved in planning which has the
interest and support of a broad segment of the population of the community.
Finally, another may have developed a disaster culture. The effect of such
a culture upon the community leadership pools' perception and definition of
water related problems and their proposals for ameliorative action will be
considered shortly.

Before turning to an analysis of these issues, let us briefly discuss the methodology utilized in this study.

The Methods

A. The Selection of the Cities

The first task to be undertaken in initiating the research was to select the communities for study. The initial research design called for the selection of five different communities. Three initial criteria were used in selecting the communities for inclusion in the sample -- size, community autonomy, and administrative importance.[13] Each of the communities was to be within the 10,000 to 25,000 population range. Each community was to be relatively autonomous, i.e., not closely linked to a neighboring metropolitan area. Finally, each community was to be a county seat. As opposed to these controlled dimensions, however, the communities were to vary in terms of the presence or absence of several different forms of collective stress. The five communities, therefore, were to have exhibited the following characteristics: (1) one community subject to recurrent flooding which has developed a disaster culture over time, (2) one community subject to recurrent flooding which has not developed a disaster culture, (3) one community faced with objective evidence of serious problems of water pollution, (4) one community faced with objective evidence of water depletion, and (5) one community with little objective evidence of stress from flooding, depletion, and/or pollution.

The search to locate the above five types of cities was undertaken with the assistance of the water resource center located at the largest university in the state, the state department of natural resources, and the state water control board. Eventually, four cities were chosen to be studied.

-15-

Within the limitations of our sample criteria, no community with a water depletion problem could be located. The communities chosen are shown in Table 1.[14]

Table 1: THE SAMPLED CITIES

City	Size (1960)	Problem
Demain	16,847	Flooding (Disaster Culture)
Teayston	11,059	Flooding (Without Disaster Culture)
Lowell	10,585	Pollution
Jefferson	12,388	None

B. The Development of a Technique to Identify
    the Power Actors in the Leadership Pool

Having selected the cities to be studied, the next step in the research was to develop a technique to locate the power actors within these communities. Many different techniques have been used in previous studies of community power.[15] The three most widely used techniques, however, are the positional, the reputational, and the event-analysis or decision-making approaches. With the positional approach, the researcher selects certain key positions in the community as being the true locus of social positions. The identified power actors usually include governmental officials, political functionaries, school administrators, organizational officials, leaders of religious groups, and so forth. With the reputational approach, however, the researcher queries

supposedly knowledgeable members of the community about which individuals and groups in the city hold superordinate social power. The power actors, in effect, are nominated by knowledgeable community residents. From the obtained list of nominations, the researcher selects the group of power actors on the basis of number of citations. As opposed to the positional approach, the reputational method is able to tap those power actors in the community who do not hold official office or legitimate positions. Thus, it is able to identify those power actors who work "behind-the-scenes." Finally, the issue-analysis or decision-making approach involves the in-depth analysis of one or more local issues in order to determine who actually participated in the process of decision making. The approach appears to have high validity, however, it is costly in terms of time and expense.

Since no single approach is totally adequate, a hybrid approach, utilizing elements of each of these approaches, was developed for this study. First a panel of three community knowledgeables was initially chosen upon the basis of three criteria. First, positions were sought whose incumbents, because of their location within the local community, would be able to identify the power actors in the local system. Second, these knowledgeables preferably would be in positions in which they would regularly interact with these power actors, and, optimally, would attempt to influence them to institute changes within the community. Finally, positions were selected whose incumbents would have knowledge of water related problems in the community, and would also be able to identify power actors in all of the institutions of the community. The panel of knowledgeables included the county extension agent, the president of the chamber of commerce, and the newspaper editor in each of the four communities chosen for the study. These knowledgeables were asked to identify

-17-

individuals in the community who were influential in "general community affairs."
Furthermore, in an attempt to achieve broad community representation from this
limited number of knowledgeables, the respondents were queried as to who was
influential in specific institutional areas, such as business and industry,
schools, religion, local government, health and welfare, local organizations
and associations, etc. In addition, in an attempt to gain information on past
community issues and to measure the validity of the nominations, these know-
ledgeables were questioned about previous issues in the local community. The
focus of this information was upon (1) who in the community was involved in
the issues, (2) what action was taken, and (3) at what stages in the process
of decision-making were various power actors involved. Finally, a brief
history of past community issues and action with a special emphasis upon water
related problems such as depletion, pollution, and flooding was obtained.

From this data the composition of the local leadership pools was deter-
mined. The actual procedure entailed compiling a list of all those individuals
nominated as power actors, and selecting those who were mentioned by at least
two of the three knowledgeables for inclusion in the leadership pool. In
addition, in an attempt not to overlook any power actors in the community, the
study was designed so that the reputed power actors were also asked to name
anyone in the community who was influential, but was not included in the ori-
ginal list. If certain names were repeatedly mentioned, these actors were also
included in the leadership pool and subsequently interviewed. In addition to
this reputational approach, two positions were also included in the leadership
pool. The mayor and local newspaper editor were automatically included in the
leadership pool because of our initial findings that these positions were
important in the local system -- regardless of the abilities of their

encumbents. Finally, certain issues in the community were analyzed in order to (1) obtain an indication of the validity of the technique, and (2) secure information about the past activities of the power actors. This approach was most utilitarian in this research effort. A total of 76 power actors were identified in the four communities: Demain = 21; Jefferson = 20; Lowell = 18; and Teayston = 17.

C. Development and Pretesting of the
   Research Instruments and the Field Work

Two different interview schedules were developed.[16] The Knowledgeable Interview Schedule was primarily constructed to identify the power actors in the community and was administered to the panel of community knowledgeables. The Leadership Pool Interview Schedule was the major instrument in the study and was administered to the identified power actors. This instrument was constructed to obtain information relevant to the structure, distribution, and exercise of power in the community, the power actors' perceptions and definitions of general community problems and specific water related problems, and the power actors' proposals to solve these problems. Operational indicators for each of the dimensions previously presented were developed. Each of these indicators was built into the research instrument.[17]

After the instruments were constructed, they were pretested in the city of Maderia (population 16,470). Like our sample cities, it is a county seat, and like Demain and Teayston, does experience recurrent flooding. This pre-test was undertaken by a team of three trained research associates from the Disaster Research Center. The pre-test was very successful. A pool of twenty-six actors was obtained. The schedules were very utilitarian, and did obtain the needed information. Only slight modification and refinement were required in the interview schedules based upon this pre-test.

After this pre-test, field work was begun. First, a field team was selected and trained. A team of four core interviewers was selected. Two of these researchers were research associates on the staff of the Disaster Research Center. Another member of the team was a graduate student who was hired for the summer field work. The final team member was a special student with training in sociology.

Field work was organized so that the interviewing within each community was completed within a two week period. The initial contact in each community was made with the county extension agent. A two-man field team was dispatched to the community for a period of two days. This team interviewed the panel of knowledgeables. Upon returning to the university, the data was analyzed and the list of power actors was compiled. The four-man field team was then sent to each community. One and a half to two hour tape recorded interviews were conducted with the power actors. Except in Demain, most of the interviewing was completed within one week. While in the community, in addition to conducting the interviews and securing requisite statistical, historical, and structural data, the field team attempted to "catch the flavor" of the city by initiating conversation with local residents and "taking in the local sights."

The field work was very successful. The power actors were very cooperative. Of the 75 identified power actors, 97.4 percent were interviewed. One individual in Teayston was out of the country and could not be contacted. One power actor in Jefferson refused to be interviewed. In addition to achieving success with the field interviewing, the field team was able to secure all of the required statistical, historical, and structural data. The interviews were subsequently transcribed by the staff of the Disaster Research

Center. The information obtained from the interviews was coded and placed

on computer cards. The results of the analysis of this data will now be

presented.

<div align="center">

A Comparison of Water Related Problems and
Other General Community Problems on the
Community Problem Dimensions

</div>

A. The Salience of Water Related Problems to
the Power Actors in the Four Communities

One of the major research questions in this study is to determine if the

power actors in these communities are aware of the existing water related

problems in their communities. The issue of salience is extremely important.

If a problem is not salient to the leadership pool, it is highly unlikely

that they will utilize their social power and power relevant resources in order

to solve it. To determine the salience of water related problems, the power

actors were asked (1) what they considered to be the two major problems in the

community in the past five years, and (2) what they considered to be the major

current problem in the community. Each power actor, therefore, cited three

problems. As Table 2 illustrates, water problems are not salient to the power

actors in these communities. A total of 222 problems were cited by these

four leadership pools. Of these problems, only five, or 2.2 percent, were

water related problems. Two power actors in Teayston cited flooding as a

problem. Likewise, pollution was mentioned twice in Lowell. In Demain, a

city which undergoes flooding almost annually and experiences serious flood-

ing every four years, of 63 cited problems, flooding was mentioned only once!

Jefferson, our control city, had no water related problems cited.

A more sensitive indicator of the salience of water related problems

may be the percent of the leadership pool which cited these types of problems

<div align="center">

-21-

</div>

Table 2: The Salience of Water Related Problems to
the Power Actors in the Four Communities

City	Number of Perceived Problems	Number Citing Water Problems	Percent
Teayston	48	2	4.2
Lowell	54	2	3.7
Demain	63	1	1.6
Jefferson	57	0	0.0
Average	222	5	2.2

at least once. Table 3 presents the percent of each leadership pool which

cited water related problems. Once again we may note that water problems are

not salient issues in these communities. In Teayston, a community which

experiences recurrent flooding, 87.5 percent of the power actors did not cite

flooding as a community problem. At the time of the study, the city of Lowell

was being sued for polluting the local stream; however, only 11.1 percent of

the power actors considered pollution as a salient issue. Only one power actor

in Demain was concerned about the community's flooding problem. In Jefferson,

as expected, no power actors cited water related problems. For the three

communities which do have water related problems, only 5 of the 55 power

actors, or 9.1 percent, cited water related problems as being major community

problems. These five power actors included the newspaper editor and water

superintendent in Teayston, the mayor and president of the CIC in Lowell,

and the mayor in Demain. For four of these actors, water problems are

directly related to their vested interests. The fifth, the newspaper editor,

recently built a new home on the bank of a local stream that often

floods. Therefore, although the number of actors is small, there is some

indication that water related problems are only salient, to the power actors

in the community if they are related to their vested interests.

Table 3: The Percent of the Power Actors in the
Four Communities Who Cited Water Related
Problems as Important Community Concerns

City	Number of Power Actors	Number Citing Water Problems	Percent
Teayston	16	2	12.5
Lowell	18	2	11.1
Demain	21	1	4.6
Jefferson	19	0	0.0
Sample	74	5	6.7

Obviously, these are not salient problems to the community's leadership.

When asked to cite problems, they are not likely to mention the water related

problems existent in their communities. What, however, if they are directly

quizzed about the existence of water related problems? Will they evidence an

awareness of the existence of such problems? In order to measure this aware-

ness, the power actors were asked, "Does your community have any water related

problems?" The results are presented in Table 4.

Apparently, the power actors in these four communities are aware of

these water related problems; they simply are not, however, salient issues.

In the three communities with water related problems an average of 82.1 percent

Table 4: Responses to the Question "Does Your
Community Have Any Water Related Problems?"

City	Percent "No"	Percent "Floods"	Percent "Pollution"	Percent "Floods and Pollution"
Teayston	12.5	37.5	12.5	37.5
Demain*	19.0	52.4	4.7	4.7
Lowell**	22.2	0.0	38.8	22.2
Jefferson	63.2	15.7	10.5	10.5

 * In Demain, 19.0 percent of the power actors cited water supply
   to a new industrial park as being a water related problem.

** In Lowell, 16.7 percent of the power actors cited water supply
   to a new industrial park as being a water related problem.

of the power actors were aware of these problems. In Teayston, the city

which experiences recurrent flooding but has not developed a disaster

culture, 75 percent of the leadership pool cited flooding as a problem, and

one-half of these power actors also noted that the streams were polluted.

In the disaster culture community, however, 57.1 percent considered floods as

a community problem. In Lowell, 61.1 percent of the power actors are aware

that the community has a pollution problem, and 22.2 percent of these noted

that the local stream also occasionally floods. These findings, however, must

be considered in light of the findings from Jefferson. In this city, which

objectively has no major water problems, 37.8 percent of the power actors

cited at least one water related problem in the community.[18]

In sum, we may conclude that water related problems are not salient con-

cerns to the power actors in these four communities. They indicate a measure

of awareness of the existence of these problems in their communities; however, when asked to cite local problems, few water problems are noted. These findings should not be comforting to anyone who is interested in solving pollution and flooding problems in these communities. Such problems simply are not salient concerns to those members of the community who hold super-ordinate social power and control vital problem-solving resources.

At this time let us turn to a comparison of the power actors' perception and definition of water related problems as opposed to other general community problems. The water and general problems will be compared on the remaining five community problem dimensions.

B. The Perceived Severity of the Problems

Do the local power actors view water related problems as being more or less severe than other community problems? This dimension of the problem definition is important, for it may determine how, when, and if any action is undertaken to solve the problem. We might assume that those problems which are perceived to be severe will be the ones for which ameliorative action is undertaken.

In order to determine the comparative degree of severity for these communities, a list of ten common problems was developed. The list included the following problems: (1) industrial and economic development; (2) housing, building, and urban renewal; (3) race and ethnic relations; (4) educational concerns; (5) health; (6) culture; (7) public improvements and services; (8) social welfare, crime, and delinquency; (9) water problems; and (10) recruitment of public servants. These problems were selected because they were general, likely or known to be present in the communities, and represented a range of issues of concern to various institutions within the communities.

Each power actor was asked to define whether the specific problems were
(1) very serious, (2) fairly serious, or (3) not serious in his community.
Each problem was rated individually. The results of this rating are shown
in Table 5.

The results of this rating are most interesting. While the water related
problems are not salient to the community leadership pool, they are viewed as
most being more serious than the average community problem. For the sample
of four communities, 24.3 percent of the power actors defined water problems
as being serious, as compared to only 16.3 percent of the other concerns.
Similarly, 35.1 percent of the leadership pool defined water problems as being
not serious, while 47 percent of the power actors defined the other community
issues in a similar manner. The highest level of severity is found in Demain,
the community with a disaster culture. Only 19 percent of the power actors
in this city defined flooding and other water related problems as being not
serious. The second highest level of severity is found in Teayston, also
a flood community, but without a disaster culture. In Teayston, 31.2 percent
of the power actors defined water problems as not being serious. A close
examination of these flood cities, however, reveals a most interesting pattern.
While the overall level of severity in Demain is higher than in Teayston, a
higher percentage of the water related problems in Teayston were defined as
very serious than in Demain. The effect of the disaster culture upon the
power actors' perceptions may be operative in this case. Demain has come to
expect and partially accept yearly flooding. It has developed elaborate plans
and procedures for responding to this flooding. Flooding is basically a "way
of life" in the community. While the power actors do perceive floods as
being serious, they are not defined as being very serious, only fairly serious.

Table 5: A Comparison of the Defined Degree of Severity Inherent in
Water Related and General Problems in the Four Communities

City	Water Problems			Water Rank	General Problems			General Rank
	Percent Very Serious	Percent Fairly Serious	Percent Not Serious		Percent Very Serious	Percent Fairly Serious	Percent Not Serious	
Teayston	37.5	31.2	31.2	2	24.3	38.1	37.5	1
Demain	28.6	52.3	19.0	1	18.1	34.7	47.1	2
Jefferson	15.7	26.3	57.9	4	12.6	36.8	50.5	3
Lowell	16.6	50.0	33.3	3	11.1	37.2	51.6	4
Average	24.3	40.5	35.1	-	16.3	36.6	40.0	-

$$r_s = +.60$$

In Teayston, however, no such plans or procedures have been developed. When the community experiences flooding it is viewed as a "disaster" by the local citizens. As a result, when the power actors define water problems as being serious, they are likely to view them as very serious. In Lowell, two out of every three power actors viewed water problems as being at least fairly serious. Only 16.6 percent, however, considered them as very serious concerns. Finally, in Jefferson six out of every ten power actors defined water problems as being not serious.

In sum, water problems are viewed as being serious concerns in these communities, in comparison to other general community problems. While this finding may be encouraging to anyone interested in instituting ameliorative action to solve these problems, two points must be noted. First, the problems are not salient. Though defined as being serious, these problems are simply not "vital issues of concern" to the local leadership. Second, a sizeable percentage of the leadership pool in each community does not consider water problems to be serious. Even in Demain, a city with a disaster culture, one out of every five power actors defined flooding as being not serious. Finally, let us note that there is a positive rank order correlation coefficient between the severity of water and general problems for these communities. Those communities which perceived the highest levels of severity inherent in the water problems, i.e. Teayston and Demain, also perceived the highest levels of severity in the general problems. Where water problems are defined as being serious, therefore, so are other problems! If water problems were the only serious issues in the community, one might expect ameliorative action to be readily undertaken to solve them. Where other issues are also viewed as being serious, however, such action becomes problematic.

C. The Degree of Consensus Concerning the Severity
    of the Water Related and General Community Problems

We have just noted the degrees of severity inherent in water problems

as compared to other community concerns. An equally important dimension,

however, is the level of agreement of consensus illustrated in these defini-

tions. In some communities the degree of consensus within the leadership pool

may be high. In others, conflict and disagreement over the severity of local

problems may be evidenced. In the former case consensus may serve to short-

cut the process of problem-solving from perception to implementation as conflicts

over priorities, resources, and strategies are likely to be lessened. Basically

we will be interested in determining the degree of consensus evidenced by the

leadership pools concerning the severity of water problems as compared to other

general community concerns.

To measure this dimension the "Index of Consensus" was developed. This

index was applied to the power actors' rating of the degree of severity inherent

in the local water problems and in the nine other community issues. This index

is basically a measure of dispersion, and has a value ranging from .000 to

1.000. If each problem was rated identically by every power actor, there

would be complete agreement or consensus regarding the severity of the problem,

and the value of the index would be 1.000. If the ratings were equally divided

between the categories of very serious, fairly serious, and not serious, how-

ever, there would be complete disagreement, and the value taken by the index

would be .000. Any value between these extremes can be interpreted as the

percent of the maximum possible consensus observed. Thus, a value of .430

represents 43 percent of the maximum possible consensus.[19] The results of this

analysis are presented in Table 6.

Table 6: A Comparison of the Degree of Consensus Evidenced
by Each Leadership Pool Concerning the Severity of
Water and General Problems in the Four Communities

City	Water: Index of Consensus	Water Rank	General: Index of Consensus	General Rank
Demain	.286	2	.450	1
Jefferson	.333	1	.392	2
Lowell	.250	3	.367	3
Teayston	.000	4	.270	4
Average	.234	-	.380	-

$$r_s = +.80$$

There is much less consensus evidenced by these leadership pools con-
cerning the severity of water problems as opposed to other community problems.
With regard to the latter problems, on the average the leadership pools
exhibit 38 percent of the maximum possible consensus. Furthermore, in each
community there is more disagreement about water problems than about other
community concerns. The highest level of consensus is exhibited by the leader-
ship pool in Jefferson, the control city. The disaster culture community of
Demain has the second highest level of consensus, but it is relatively low
(.286). There is absolutely no consensus in Teayston, the flooding community
without a disaster culture, about the severity of the city's water related
problems. Finally, we must again note the strong, positive rank order correla-
tion (+.80) between these two variables. Basically, this association shows
that those leadership pools which are in basic agreement about the severity

of general problems, are also those pools which have the highest levels of agreement about the severity of water problems. Social factors, such as the structure and characteristics of the leadership pool, may be responsible for this high association.

Where there is little agreement among the power actors about the severity of a problem, the possibility and probability of instituting successful ameliorative action are lessened. The above observed lack of consensus, therefore, may indicate that the institution of local solutions to water related problems will be difficult.

D.   The Defined Possibility of Local Solution

Concerning the possibility of successful ameliorative action, a crucial dimension is the degree to which the power actors define the local community as being able to solve a problem by itself, at the local level. The power actors may perceive that the local community does not have the requisite authority, resources, skills, knowledge, or responsibility to bring about an effective solution to certain problems. Problems which are not defined as being solvable by the local community are more complex. Outside assistance is required to ameliorate them. There is likely to be greater difficulty in instituting solutions to such problems. A most important question, there-fore, centers on the perceived degree of local solvability inherent in the power actors' definitions of water problems as opposed to other community problems.

In order to measure this dimension, the power actors were asked to identify what they considered to be the most important current problem in the community. A series of specific questions concerning such factors as the cause, nature, and solution of the problem were then posed. One of the

questions asked the power actors was if their perceived problem could be solved by the local community, or would outside assistance be required. Subsequently, the power actors were queried about water related problems, and the identical questions were again asked. Therefore, we will be comparing water problems with the other concerns that are viewed by the power actors as "the most important local problems."[20] How do these two types of problems differ in their degrees of local solvability? The results are presented in Table 7.

Table 7: A Comparison of the Degree of Local Solvability Inherent in the Problem Definitions of Water and General Problems in the Four Communities

City	Percent of Water Problems Defined as being Locally Solvable	Water Rank	Percent of General Problems Defined as being Locally Solvable	General Rank
Lowell	50.0	1	83.4	1
Jefferson	28.5	2	63.2	2
Teayston	7.1	3	43.7	3
Demain	4.7	4	33.3	4
Average	22.9	-	55.9	-

$$r_s = +1.00$$

The power actors in these four communities do not perceive that the local community, by itself, can solve the water related problems. The degree of local solvability inherent in the definitions of water problems (22.5 percent) is much lower than the degree of local solvability inherent in

the other major community problems (55.9 percent). Only in Lowell, where the local community is polluting the stream, are at least one-half of the water problems defined as solvable by the local city. It is especially noteworthy that the degrees of local solvability are extremely low in the flood communities. In Teayston, only 7.1 percent of the power actors defined the local community as being able to solve its water problems. In Demain, where there is a disaster culture, only 4.7 percent of the leadership pool defined water problems as being locally solvable. This small percentage may indicate a sense of "resignation" on the part of the power actors in this disaster culture community. These findings should not be encouraging to anyone attempting to institute local solutions to water related problems. The power actors in the local community, who control social power and hold vital problem-solving resources, simply do not believe that the local community can solve these problems. In effect, they are saying, "we must have outside assistance; there is nothing we can do by ourselves." Such an attitude is not conducive to the rapid implementation of local action!

Finally, we must note the perfect, positive association (+1.00) between the rank ordering of the communities on these dimensions. Those communities which perceived the highest degrees of local solvability inherent in the general problems, were also the cities which perceived the highest degree of local solvability in the water problems. This dimension may be interpreted as an indicator of the power actors' perception of the problem solving ability of the local community. Where the community is perceived to be a strong, viable problem solving entity, the degree of local solvability is high. We may note that the perceived problem solving ability in these communities apparently applies to both general and water problems, although the degree of local solvability is much higher for the former concerns.

E. The Degree of Uniqueness in the Problem Definitions

Compared to other, major community issues, do the power actors perceive water problems as being unique to their local community, or do they perceive that other nearby and similar cities have the same problems. In order to measure this dimension, each power actor was asked to identify what he considered to be the most important current problem in the community. He was then asked if this problem was unique to his city, or if other nearby communities or cities of comparable size had similar problems. Water problems were also specifically discussed, and this identical question was asked with respect to these issues. The higher the percentage of the total problems which were defined as being unique, the greater the degree of uniqueness in the problem definitions. The results of this analysis are presented in Table 8.

Basically, neither water related nor general problems are viewed as being unique by the leadership pools in these four communities. The degree

Table 8: A Comparison of the Degree of Uniqueness Inherent in the Definitions of Water and General Problems in the Four Communities

City	Percent of Water Problems Perceived to be Unique	Water Rank	Percent of General Problems Perceived to be Unique	General Rank
Jefferson	28.5	1	15.8	1
Teayston	21.4	2.5	12.5	3
Lowell	21.4	2.5	11.1	4
Demain	19.0	4	14.3	2
Average	22.6	-	13.4	-

$$r_s = +.35$$

of perceived uniqueness inherent in the definitions of water related problems, however, is slightly higher; 22.6 percent as compared to 13.4 percent. Furthermore, the leadership pools of these communities exhibit little variation on either type of problem. Concerning the general problems, the range is only 4.7 percent. With regard to the water related issues, the range is 9.5 percent. It may be noted that Jefferson has the highest degree of uniqueness for both problems, and that there is a moderate positive (+.35) association between the two issues. In sum, however, while water problems are viewed as being more unique than other community issues, the degree of uniqueness for either type of problem is low.

F. The Degree of Clarity Inherent in
    the Problem Definitions

The reader may recall that by clarity of definition we are referring to the extent to which the power actors define local problems in specific cause and effect terms. This dimension would appear to affect the likelihood of any solution being proposed to ameliorate the defined problems. If the leadership pool is unable to impute a casual association, or where the causal association offered is abstract and amorphous, the level of inactivity might be expected to be high.

Do the power actors define water problems in clear cause and effect terms? How does the degree of definitional clarity inherent in these problem definitions compare with the definitional clarity of other, general community issues? In attempting to measure this dimension, we again focused upon the power actors discussions of the most important community problem and specific local water problems. The power actors were queried about the possible cause or causes of these problems. A content analysis was performed upon their

answers to this questioning. Each answer was classified into one of five

categories: (1) no cause offered, (2) single specific cause offered,

(3) multiple specific cause offered, (4) single general cause offered,

(5) multiple general cause offered. As an indicator of this concept, the

percentage of the problems for which cause was imputed in specific cause and

effect terms was utilized.[21] The results of this analysis are presented in

Table 9.

The degrees of definitional clarity inherent in water and general prob-

lems are very similar. Slightly fewer water problems, however, were clearly

defined. For the total sample, 37.8 percent of the general problems were

defined in specific cause and effect terms, while only 32.3 percent of the

water problems were so defined. Furthermore, only in Jefferson, the control

city, are water related problems more clearly defined than other general

community issues. In addition, the two flood communities had the lowest degree

of definitional clarity. Only 7.2 percent of the power actors in Teayston

were able to offer specific causal agents as being responsible for the cities

flooding and pollution problems. Finally, there is a high positive association

between the rank ordering of the communities on these two dimensions, i.e.+.80.

Therefore, regardless of the problem, Jefferson and Lowell have higher degrees

of definitional clarity than do Demain and Teayston.

Once again we must note that these findings may not be encouraging to

anyone interested in instituting community action to solve water related

problems. In those communities which do have major water related problems,

only 24.3 percent of the power actors were able to offer clear definitions

of these flooding and pollution problems. Approximately three out of every

four power actors either were unable to identify any cause for these problems,

Table 9: A Comparison of the Degree of Clarity Inherent in
the Definitions of Water and General Problems in
the Four Communities

City	Percent of Water Problems Which Were Clearly Defined	Water Rank	Percent of General Problems Which Were Clearly Defined	General Rank
Jefferson	57.1	1	33.3	2
Lowell	42.9	2	60.0	1
Demain	23.8	3	31.6	3
Teayston	7.2	4	26.7	4
Average	32.3	-	37.8	-

$$r_s = +.80$$

or offered very general, amorphous conditions as causal agents. When the actors in the community who control social power and problem-solving resources exhibit confusion about the nature of a problem, the possibility of instituting successful ameliorative action is lessened.

In this section we have examined the salience and nature of the power actors' perceptions and definitions of water related problems. In addition, we have compared these definitions with similar definitions of other, general community problems. At this time, let us briefly summarize these findings. First, we have observed that water problems <u>are not salient issues</u> to the leadership pools in these four communities. In no community did over 12.5 percent of the power actors cite water problems as being major community problems. For the entire sample, 6.7 percent of the power actors cited water problems as salient issues. Second, when the power actors are directly

queried about water problems, however, they do view them as being _more serious_ than other community problems. For the entire sample, 64.8 percent of the power actors viewed water problems as being at least fairly serious; the corresponding percentage for the general community problems was 52.9 percent. Third, while the water related problems are perceived to be at least fairly serious by the power actors in these communities, there is _very little consensus_ evidenced in these leadership pools concerning this severity. In each community there is _more_ disagreement about the severity of water problems than about other community concerns. Concerning the latter problems, the leadership pools, on the average, exhibited 38 percent of the maximum possible consensus. With regard to water problems, however, only 23.4 percent of the maximum possible consensus was observed. Fourth, the power actors in these four communities _do not perceive that the local community, by itself, can solve the water related problems_. Only 22.5 percent of the power actors perceived that the local community could solve the water related problems. On the other hand, 55.9 percent of these actors stated that the local community could solve the other, general community problems. Fifth, _neither water nor general problems are viewed as being unique_ by the leaders in these cities. There is a slight tendency, however, to view water problems as being more unique to the local community than the other community concerns. Sixth, the power actors are less likely to be able to offer clear definitions, i.e. definitions stated in specific causal terms, to water problems, as opposed to other community issues.

These findings should be important, though not encouraging to anyone attempting to solve water related problems. The local power actors have the social power and resources to aid or abet any attempt to solve these problems.

Though they perceive these issues as being serious, they exhibit little agreement about the degree of severity. The power actors do not believe that the local community can solve these problems, and they exhibit a lack of understanding of the specific causes of pollution and flooding. Finally, perhaps the most discouraging findings of this analysis is that water related problems are not salient, urgent issues to the members of the local leadership pool. Considering these factors, gaining the interest and cooperation of the power actors in the local community may be a difficult task if one wishes to solve water related problems.

At this time, let us turn to a comparison of the leadership pools' proposals for ameliorative action to solve the water and general problems.

A Comparison of Water Related Problems and Other General Community Problems on the Patterns of Ameliorative Action

A. The Urgency or Immediacy of Instituting the Ameliorative Action

The first dimension in the set of action variables involves the degree of urgency perceived by the power actors to be inherent in any ameliorative action proposal. Some solutions to specific problems may have to be undertaken "immediately." If problems are salient to the power actors, and are perceived by them as being serious, threatening to life, property, and/or community values and mores, disturbing to the normal conditions in the local community, or threatening to their vested interests, they are likely to be defined as requiring urgent or immediate solutions. The solutions to other problems, however, may not be urgently needed, and may be postponed "indefinitely." The possibility of successful implementation of any action program is influenced by this dimension. The specific questions we will

attempt to answer at this time are "Do the local power actors perceive that solutions to local water related problems are urgently needed?" and "Are solutions to water related problems viewed as more or less urgently needed than solutions to other general community problems?"

In order to measure this dimension, the power actors were asked to specifically discuss two problems: (1) what they considered to be the most important current community problem, and (2) what they considered to be the most important local water related problems. Concerning each of these problems, the power actors were asked, "How urgent is a solution to this problem?" The responses to this question were classified into one of the following three categories: urgent, semi-urgent, and not urgent. If a solution was viewed as essential within a six-month period, the action was classified as urgent. Any action proposed to take place over a period of two years was classified as not urgent. The results of this analysis are presented in Table 10.

The power actors apparently <u>do not</u> regard water related problems as requiring urgent, immediate solutions. Only 26.2 percent of the problems were defined as requiring urgent solution. Conversely, 51.4 percent of the water related problems were perceived as <u>not</u> needing urgent amelioration. In effect, over one-half of the power actors perceive that ameliorative action to solve water related problems can be postponed at least two years. The urgency inherent in the general problems, however, is much higher. About six out of every ten power actors perceived that urgent solutions were required to these concerns. Only 16.1 percent viewed them as not being urgent matters. In addition, general problems are viewed as being more urgent than water problems in every city. The differences between the communities are also interesting. In Demain we may note that effect of the disaster culture upon

Table 10: A Comparison of the Perceived Degree of Urgency
Inherent in the Proposed Solutions to Water and
General Problems in the Four Communities

City	Water Problems				General Problems			
	Percent Urgent	Percent Semi-Urgent	Percent Not Urgent	Water Rank	Percent Urgent	Percent Semi-Urgent	Percent Not Urgent	General Rank
Teayston	42.9	21.4	35.7	1	87.6	6.2	6.2	1
Jefferson	28.5	28.5	42.9	2	57.8	31.5	10.5	2
Lowell	28.6	21.4	50.0	3	38.8	27.7	33.3	4
Demain	4.7	19.0	77.2	4	57.1	28.5	14.2	3
Average	26.2	22.6	51.4	-	60.3	23.5	16.1	-

$$r_s = +.80$$

the degree of urgency perceived to be requisite to solve the city's flooding

problems. Only 4.7 percent, or about one out of every twenty, of the power

actors regard flooding as a problem requiring an immediate solution. This

finding offers additional substantiation to the acceptance of flooding as a

"way of life" in Demain. In Teayston, however, 42.9 percent of the power

actors perceive a need for an immediate solution to that city's flooding

problems. Finally, we must again note the strong positive association (+.80)

between the rank ordering of the communities on this dimension with respect

to these two types of problems. It appears that the leadership pools of

certain cities, such as Teayston and Jefferson, consistently regard local

problems as requiring immediate solutions, irrespective of the type of problem.

Apparently the characteristics of the leadership pools and the nature of the

problem definitions in these communities are conducive to the perception of

a need for urgent action.

Let us briefly note that if anyone hopes to initiate urgent, immediate

solutions to water related problems in these communities, he faces a difficult

task. The power actors in these communities simply do not believe that

such ameliorative action is required.

B. The Degree of Institutional Coordination Required to
   Successfully Implement the Proposed Ameliorative Action

This characteristic is important because it represents a crucial deter-

minant of successful implementation. It concerns the degree to which the

action proposals require coordination among the various institutions in the

community. If successful implementation is contingent upon the involvement

and coordination of many different local institutions, such as the governmental,

economic, industrial, and educational institutions, the community is faced

with a complex activity. If, however, a solution can be undertaken by one or two institutions, problems inherent in the coordination of many units are minimized. In the latter situation, the possibility for successful implementation may be greater.

In order to measure the degree of institutional coordination inherent in the power actor's proposed solutions to water and general community problems, each power actor was asked to identify which local institution(s) should be involved in the action in order to attain success, and to designate which institution(s) were responsible for finding a solution. The leadership pool's proposals were classified as either (1) requiring coordination or (2) not requiring coordination. If a proposal required the involvement of three or more institutions, it was classified as "requiring coordination." The results of this analysis are presented in Table 11.

Table 11: A Comparison of the Perceived Degree of Institutional Coordination Inherent in the Proposed Solutions to Water and General Problems in the Four Communities

City	Percent of Water Problems Requiring Coordination	Water Rank	Percent of General Problems Requiring Coordination	General Rank
Demain	14.2	1	33.3	3
Teayston	6.2	2	42.5	2
Lowell	5.5	3	44.4	1
Jefferson	5.2	4	31.5	4
Average	7.2	-	30.4	-

$$r_s = +.20$$

The power actors perceive that the solution to water problems in the communities does not require extensive institutional coordination. Only 7.2 percent of the actors viewed institutional coordination as being necessary. The highest level is in Demain; however, even in this disaster culture community which has a rich history of institutionally coordinated flood response, the percentage in only 14.2. The other community problems also have relatively low levels of institutional coordination, however, they do require greater coordinative action than the water problem solutions. The Spearman rank order correlation coefficient for these rankings is weak and positive (+.20). Apparently the nature of the problem strongly influences the perceived degree of institutional coordination required for successful implementation of ameliorative action.

These findings may be more encouraging to anyone attempting to solve local water problems. The power actors do not perceive that complex, coordinative activity is necessary to solve these types of problems. Basically, they propose that these problems can be solved by the activity of one or two institutions. Of crucial importance, however, is which particular institutions are perceived to be responsible for this action. Furthermore, does this institution(s) control superordinate social power and requisite problem solving resources? The next dimension may provide some information relevant to these issues.

C. The Degree of Public Responsibility for Action

This dimension refers to the degree to which the action proposed by the leadership pool is defined as solely the concern of the "public" or governmental, as opposed to the "private" sector of the community. Our concern will be in determining the extent to which the proposals offered by the power

actors to solve water and general community problems are defined as being

solely a public concern. As we noted previously, this dimension is important

because questions concerning legality, tactics, strategies, etc. are affected

by this variable. Furthermore, it is also an indicator of the probability

of successfully implementing any action program. For example, if the economic

and industrial institutions in the community control superordinate social

power, those problems that are viewed as public or governmental concerns are

not as likely to receive the support of the local power actors, or to be as

successfully solved as those defined as economic or industrial matters.

To measure this dimension the power actors were asked if their proposed

solutions to water and general problems were "public" or "private" concerns.

Their responses were classified as (1) solely "private," (2) solely "public,"or

(3) a combination of "private" and "public" concerns. The percentage of the

total water and general problems which were defined as solely "public" concerns

is presented in Table 12.

As perceived by these power actors, solutions to water related problems

are the responsibility of the "public" sector of the community. For the entire

sample, 80.2 percent of the power actors viewed water problems as being "public"

concerns. In contrast, only 30.5 percent perceived that the "public" sector

was responsible for solving the other community problems. In effect, the

power actors in these communities are overwhelmingly stating that "pollution

and flooding are governmental concerns, not issues for the business, indus-

trial, financial, or educational institutions."

If these findings are coupled with those relevant to the degree of

institutional coordination, it appears as though the power actors define

solutions to water related problems as being the responsibility of the "public"

-45-

Table 12: A Comparison of the Percentage of "Public" Respon-
sibility Inherent in the Proposed Solutions to
Water and General Problems in the Four Communities

City	Percent of Water Problems Defined As Public Concerns	Water Rank	Percent of General Problems Defined As Public Concerns	General Rank
Demain	90.4	1	47.6	1
Jefferson	89.4	2	26.3	3
Lowell	72.2	3	16.7	4
Teayston	68.7	4	31.3	2
Average	80.2	-	30.5	-

$$r_s = +.40$$

or governmental sector of the community -- _working by itself_. Analysis has shown that the leadership pools in Demain, Jefferson, and Lowell have high representation from the business and industrial institutions, low representation by governmental officials, and tend to be dominated by the economic and industrial sphere of the community.[22] These are the communities with the highest percentage of public responsibility for water problem solutions. Teayston, on the other hand, contains a leadership pool in which the plurality of the power actors, 41.2 percent, are representatives of the governmental sector of the community. Teayston, however, exhibited the lowest level of "public" responsibility, though 68.7 percent of the power actors did view water problems as "public" concerns. On the basis of these findings, we might propose that the probability of instituting successful ameliorative

activity to solve water related problems in these four communities is not
great. In effect, the power actors have defined that an institution which is
subordinate in social power is solely responsible for solving these types of
problems. Without the support of other institutions which have superordinate
power and control vital problem-solving resources, the governmental sphere is
severely handicapped in attempting to solve water problems. In such cases
it may be highly unlikely that the local governmental institution will be able
to solve these problems itself. Outside assistance in the form of capital,
knowledge, authority, material, resources, and manpower may be needed.

D. The Degree of Perceived Relevance
   of Local Organizations

This dimension refers to the degree to which the power actors define
local community organizations as being relevant for the successful implemen-
tation of their proposals for solving water and general problems. The support
of local organizations which control vital problem-solving resources is crucial
if any ameliorative activity is to result in success. Basically, we will be
examining two questions: "Do the local power actors perceive that the involve-
ment of many local organizations is requisite to a successful solution to
water related problems?" and "What is the comparative degree of perceived
organizational relevance between water and general problems?"

In order to measure this dimension, the power actors were given a list
of twenty local organizations and officials. This list included the follow-
ing organizations: (1) chamber of commerce, (2) newspaper, (3) industry,
(4) mayor, (5) merchants, (6) bankers, (7) city council, (8) business,
(9) church leaders, (10) school board, (11) county commissioners, (12) school
teachers and administrators, (13) Republican party, (14) neighborhood groups,

(15) Democratic party, (16) bar association, (17) labor unions, (18) farm organizations, (19) the American Independent party, and (20) racial and ethnic groups. To increase comparability the same list was presented to each power actor. They were asked to rate each organization's relevance to their ameliorative action proposals as (1) essential, (2) important, but not essential, or (3) not important. Table 13 presents the degree of perceived organizational relevance inherent in the proposals to solve water related and general community problems.

As may be observed, the levels of organizational relevance are very similar for both water and general problems. With respect to water related problems, the support of 38.2 percent of the organizations was defined as being essential. The corresponding percentage for the general problems was 45.1. In each community, the percentage of essential support is higher for the general problems than for the water problems, however, only in Demain does the difference exceed 4 percent. This city has a tradition of organizational involvement in flood response. The power actors may also perceive that the support of these organizations is important to <u>solve</u> local flooding problems. We must also note the strong, positive association (+1.00) between the community rank ordering on both of these types of problems. Apparently such factors as the characteristics of the leadership pools and the nature of the problem definitions affect the degree of organizational relevance inherent in the ameliorative activity. Regardless of the specific problem involved, the communities exhibit identical rank orderings.

In addition to the overall level of organizational relevance, another important dimension concerns which specific local organization's support is defined as being essential. Specifically, we are interested in determining

Table 13: A Comparison of the Degree of Perceived Organizational
Relevance Inherent in the Proposed Solutions to
Water and General Problems in the Four Communities

City	Water Problems			Water Rank	General Problems			General Rank
	Percent Essential	Percent Important	Percent Not Important		Percent Essential	Percent Important	Percent Not Important	
Demain	39.7	29.3	30.9	1	52.8	27.0	20.0	1
Jefferson	39.4	23.1	37.3	2	43.4	27.6	28.9	2
Lowell	38.6	25.5	35.8	3	41.9	27.5	30.5	3
Teayston	34.0	28.1	37.8	4	39.6	26.2	34.0	4
Average	38.2	26.5	35.2	-	45.1	27.1	27.8	-

$$r_s = +1.00$$

if the same organizations are viewed as being essential for the solution of both water and general problems, or if different organizational involvement is perceived as being necessary for these problems. Table 14 presents the rank ordering of the ten highest ranked organizations whose support is viewed as being essential for water and general problems.

Table 14: A Comparison of the Rank Ordering of the Ten Most Essential Organizations to the Solutions for Water and General Problems

Rank	Water Problem: Organizations	General Problem: Organizations
1	Mayor	Newspaper
2	Chamber of Commerce	Chamber of Commerce
3	Newspaper	Industrial Leaders
4	Industrial Leaders	Mayor
5	City Council	Merchants
6	Merchants	Financial Leaders
7	County Commissioners	City Council
8	Neighborhood Groups	Business Leaders
9	Financial Leaders	Church Leaders
10	Business Leaders	County Commissioners

Basically the organizations whose support is perceived to be essential for successful ameliorative activity are the same for both types of problems. Nine organizations appear on both lists. The support of neighborhood groups is ranked eighth on the water problem list, but neighborhood groups are not ranked in the top ten on the general list. In addition, church leaders are

ranked ninth on the general list, but they do not appear in the top ten for water problems. These are slight differences, however, in the rank orderings. Concerning the solutions to water problems, local governmental representatives, such as the mayor, city council, and county commissioners, are ranked as being more essential than they are to the success of other issues. The support of economic and industrial leaders is generally perceived to be less essential to water related problems than to the general issues. The involvement of the local newspaper and the chamber of commerce is viewed as being very essential to the implementation of ameliorative action to solve either problem.

In sum, the support of governmental units is viewed as being more important for the solution of water problems as opposed to other community problems. Furthermore, the overall level of organizational relevance is slightly lower for water problems as opposed to general problems. Generally, these findings show a relatively high degree of similarity between these two types of problems on these dimensions.

E. The Degree of Proposed External, Non-Local
    Involvement in the Ameliorative Action

This dimension refers to the degree of external, non-local assistance that the power actors define as being required in order to bring about a successful solution to their ameliorative proposals. If the local community is not able to solve a problem, non-local assistance may be sought. The process of requiring external financial, human, ideational, and material aid is complex and difficult. Therefore, if a high degree of external aid is perceived as being requisite, the probability of successfully implementing ameliorative action is lessened. We previously noted that water problems were

defined as not being solvable by the local community. Logically, we can expect that the power actors' proposals to solve these problems would require a high degree of external, non-local involvement.

In discussing their proposals for solving local water and general problems, the power actors were asked if outside, non-local assistance would be needed. Each action proposal was classified as (1) local, (2) local with non-local assistance, (3) equal local and non-local involvement, (4) non-local with local assistance, and (5) non-local. A Likert-type weighting was utilized, with those proposals defined as local concerns being rated one, and non-local solutions being assigned a weight of five. This weighting was based upon the assumption that the degree of external involvement increases with a decrease in local involvement. The results of this analysis are presented in Table 15.

As expected, the degree of proposed external, non-local involvement is much higher for water related problems than for general community issues. In each community, water problems are perceived as requiring a greater degree of involvement by non-local units. Furthermore, the differences become greater with increasing non-local involvement. For example, 45.9 percent of the water related problems are viewed as primarily the responsibility of non-local units. Of this category, 38.2 percent are defined as requiring no local involvement. On the other hand, only 10.1 percent of the general problems are perceived to be primarily the responsibility of non-local units, and some degree of local assistance is always defined as being necessary. It may also be observed that the two flood communities have the highest perceived degrees of requisite external involvement, while the percentages in Jefferson and Lowell are much lower, but very similar. Finally, let us note that there is a very strong positive association (+1.00) between the community rank

Table 15: A Comparison of the Degree of Proposed External, Non-Local Involvement Inherent in the Proposed Solutions to Water and General Problems in the Four Communities

City	Water Related Problems						General Problems				
	Percent Local with Non-Local Assistance	Percent Combined Local and Non-Local Assistance	Percent Non-Local with Local Assistance	Percent Non-Local	Mean Weighted Score	Water Rank	Percent Local with Non-Local Assistance	Percent Combined Local and Non-Local Assistance	Percent Non-Local with Local Assistance	Mean Weighted Score	General Rank
Demain	14.2	9.5	28.5	42.8	3.91	1	14.2	28.5	23.8	2.55	1
Teayston	14.3	7.1	55.5	14.3	3.57	2	43.7	6.2	6.2	1.75	2
Jefferson	28.5	28.5	14.2	0.0	2.29	3	15.7	10.5	10.5	1.68	3
Lowell	14.3	7.2	14.3	14.3	2.28	4	16.6	0.0	0.0	1.17	4
Average	17.8	13.1	28.1	17.8	3.01	-	22.6	11.3	10.1	1.76	-

$$r_s = +1.00$$

orderings on these two problems. This may indicate that Demain and Teayston are viewed by the power actors as being less viable, local problem-solving communities than Jefferson and Lowell. The former communities are perceived to require greater non-local assistance in local problem-solving situations. Furthermore, we must observe that, as expected, there is a perfect, negative association (-1.00) between the community problem dimension of local solvability and the action pattern of non-local, external involvement.

These findings indicate that any attempt to being about local solutions to water related problems will be complex, difficult, and unlikely to result in success. Almost one-half of the local power actors in these communities perceived that non-local agencies and organizations should be primarily responsible for instituting such activity. If the local community is to respond under such conditions, the impetus for action may have to come from outside the local system.

F. The Perceived Possibility of "Blockage"

The reader may recall that by "blockage" we are referring to the act of opposing, stalling, and successfully defeating any proposal for ameliorative action. Basically at issue, therefore, is the presence of "veto power" within the community. The concept has obvious utility for predicting the outcome of community action proposals. If the level of "blockage" is high, the probability of successful amelioration is lessened. How do water and general problems compare on this dimension?

The power actors were asked if there were any individuals or groups whose opposition would be impossible or extremely difficult to overcome in the implementation of their proposals to solve the community's water and general problems. In Table 16 are presented the percentages of the water and

general problems that were perceived by the power actors as facing possible

"blockage" by <u>either</u> individuals or groups.

Table 16: A Comparison of the Degree of Perceived "Blockage" Inherent in the Proposed Solutions to Water and General Problems in the Four Communities

City	Percent of Water Problems Which Face Possible Blockage by Individuals or Groups	Water Rank	Percent of General Problems Which Face Possible Blockage by Individuals or Groups	General Rank
Jefferson	42.1	1	52.5	1
Demain	40.4	2	47.6	3
Lowell	38.9	3	50.0	2
Teayston	21.9	4	31.3	4
Average	35.8	-	45.4	-

$$r_s = +.80$$

The power actors in these communities perceive that there is a slightly lower probability that water problems will be blocked by local individuals and groups. Thirty-five and eight-tenths percent of the water problems were perceived as "blockable," while 45.4 percent of the general problems were so defined. While these findings would appear to indicate that water problems may be more easily attacked and have a higher probability of receiving successful amelioration, the absolute percentages must be noted. The power actors in these communities perceive that one out of every three water problem solutions can be blocked. In itself, this is a fairly high percentage. When this dimension is combined with the previously mentioned problematic elements

the apparent difficulty in instituting ameliorative action to solve water problems is again evident.

Once again we must note the strong positive association (+.80) between the rank orderings on these two problems. Such social factors as the characteristics of the leadership pool may be determinants of the differences between the rank ordering of the communities on these two types of problems. Analysis has shown that the most pluralistic leadership pool is located in Teayston.[24] The most elitist pool is found in Jefferson. One would expect the probability of "blockage" to be higher in the latter community.

G. The Level of Inactivity

This characteristic refers to the proportion of perceived problems for which no action either has been initiated or proposed. Not only is this dimension an indicator of the likelihood of successful implementation, but it may also indicate the "problem-solving ability" of the local community. To measure this dimension, the power actors were asked if any ameliorative activity had been undertaken to solve the local water and general problems. If none had been initiated, the power actors were asked to explicate their personal action proposals. The level of inactivity inherent in the action was defined as the proportion of problems for which no activity had been undertaken or proposed. The power actors were always able to offer some proposal to solve the problems, therefore, the level of inactivity was based solely upon the proportion of problems for which no ameliorative action has been undertaken. The results of this analysis are presented in Table 17.

For the entire sample, the level of inactivity for the water problems is slightly higher than the corresponding level for general problems, i.e. 19.9 percent as opposed to 15.5 percent. Both of these levels, however, are

Table 17: A Comparison of the Levels of Inactivity
Inherent in the Proposed Solutions to Water
and General Problems in the Four Communities

City	Percent of Water Problems for Which No Ameliorative Action has been Undertaken	Water Rank	Percent of General Problems for Which No Ameliorative Action has been Undertaken	General Rank
Demain	28.5	1	9.5	3
Jefferson	22.5	2	15.7	2
Teayston	14.3	3.5	31.2	1
Lowell	14.3	3.5	5.5	4
Average	19.9	-	15.5	-

$$r_s = +.35$$

relatively low. Of particular interest in Table 17, however, is the differences

evidenced between the two flood communities. Demain, the community with the

disaster culture, has the highest level of inactivity with respect to water

problems (28.5 percent), but only the third highest level of inactivity for

general problems (9.5 percent). Teayston, on the other hand, has a low level

of inactivity with respect to water problems (14.3 percent), but the highest

inactivity level for general problems (31.2 percent). In fact this non-disaster

culture community is the only one with a higher level of inactivity for general

problems as opposed to water related concerns. The high level of inactivity

in Demain may be a result of the disaster culture. Flooding is an accepted

and expected part of life in Demain. The citizens of the community view

floods as nuisances at worst, and as "carnivals" at best. Having become a

part of the local culture, there is not a great desire to institute expensive, time-consuming, complex action to prevent floods and solve the problem. In Teayston, on the other hand, flooding is a more salient "disastrous" problem. The community is currently involved in a watershed program in an attempt to prevent future floods.

This final dimension may be encouraging to those interested in implementing ameliorative action to solve water related problems. The level of inactivity inherent in the water problems in these communities is relatively low. Some activity, even if it amounts to little more than community discussions and planning sessions, is being undertaken.

In sum, we have compared water and general problems on seven patterns of ameliorative action. We have observed that in comparison to other general community problems, the solutions to (1) water problems are not defined as being urgent, (2) are not perceived as requiring extensive institutional coordination, (3) are viewed as definitely being "public" concerns, (4) are perceived to have slightly lower levels of organizational relevance, with relevance being attributed to local governmental units, as oposed to economic and industrial organizations and officials, (5) are defined as requiring a large amount of external, non-local assistance, (6) are defined as having a slightly lower probability of being "blocked" by local individuals and groups though this probability is moderately high, and (7) have slightly higher though relatively low levels of inactivity. In light of these findings, immediate, successful implementation of ameliorative action to solve local water related problems is problematic. The power actors in the community who control social power and vital problem-solving resources do not view these problems as needing urgent attention. Basically, they offer that these are problems that the

government must solve, without the assistance of other local institutions, but with the aid of outside sources of capital, knowledge, authority, skill, manpower, and material resources. In addition, the power actors perceive that about one-third of the water problems can be blocked by the action of local individuals and groups. As possible sources of encouragement, we may note that the problems apparently do not require the involvement of various local institutions, and therefore do not face complex problems inherent in the coordination of such institutions. More importantly, the level of inactivity inherent in these problems is relatively low. At least something is being done to solve these issues. To completely solve these problems in these types of communities, however, will be an extremely difficult task requiring a massive attempt to secure the cooperation and active involvement of those power actors who control the resources with which to aid or abet any proposed ameliorative activity.

FOOTNOTES: Part A

1. For a theoretical discussion of collective stress, see Russell R. Dynes, *Organized Behavior in Disaster* (Lexington, Mass.: D.C. Heath Publishing Co., 1970), especially Chapter 3.

2. This model and the following definitions are based upon the comparative model developed by Dennis Wenger. See Dennis Wenger, "Toward a Comparative Model for the Analysis of Community Power: A Conceptualization and Empirical Examination" (Ph.D. dissertation, The Ohio State University, 1970), pp. 64-66.

3. Wenger, "Comparative Model," p. 28-37.

4. See Terry Clark, *Community Structure and Decision Making: Comparative Analysis* (San Francisco: Chandler Publishing Co., 1968), pp. 58-67.

5. See Wenger, "Comparative Model," especially Chapter 5.

6. Wenger, "Comparative Model," pp. 68-91.

7. Thomas J. Anton, "Power, Pluralism, and Local Politics," *Administrative Science Quarterly* (March 1963): 425-447.

8. Wenger, "Comparative Model," pp. 114-116.

9. Wenger, "Comparative Model," pp. 117-139.

10. Wenger, "Comparative Model," pp. 144-148.

11. Wenger, "Comparative Model," pp. 148-172.

12. For discussions of "disaster culture" see Dynes, *Organized Behavior*, p. 92; Dennis Wenger and Arnold Parr, *Community Functions Under Disaster Conditions*, Disaster Research Center Report Series, no. 4 (Columbus: Disaster Research Center, The Ohio State University, 1969), pp. 16-17; and Harry E. Moore, *. . . and the wind blew* (Austin, Tex.: Hogg Foundation, 1964), pp. 195-213. Moore was the first to develop this concept.

13. These variables were utilized for purposes of controlling certain structural dimensions that were assumed to be relevant to the structure of the leadership pool in various communities, and to the pool's perception and definition of community problems. The importance of size and autonomy as crucial antecedent determinants of these is obvious. Furthermore, the level of administrative importance in the community is relevant to the distribution of power. It serves to indicate the quantity of power-relevant resources available to the governmental institution. In other words, the attempt was made to select cities that were very similar in structure. They were to vary only in the presence or absence of (1) certain water related problems, and (2) a disaster culture. These controls increased the variety of the study.

14. All names of cities and individuals used in this study are fictitious.

15. An excellent review of all of these techniques is found in Wendell Bell, Richard Hill, and Charles Wright, Public Leadership (San Francisco: Chandler Publishing Co., 1961), pp. 5-33.

16. Copies of these schedules are available from the Disaster Research Center, The Ohio State University, 127-129 West Tenth Avenue, Columbus, Ohio 43201.

17. An index of these concepts and sources of data that may be used to operationalize them may be found in Wenger, "Comparative Model," pp. 220-223.

18. The water related problems cited in Jefferson, however, were rather unique. Those who mentioned floods or floods and pollution were refering to a sewage backup problem that had affected them personally after a heavy rain. One power actor noted that the local stream was polluted, though it was not heavily polluted.

19. The formula representing this index is $I_c = 1 - \dfrac{\Sigma D_I}{N_p D_{max}}$ where I_c = Index of Consensus, D_I = the dispersion or dissensus within each problem is computed by $D_I = N - M_o$ where M_o is the number of the model category and N_p is the total number of problems. D_{max} is the maximum possible dissensus and is computed by $D_{max} = N - N/3$ where N is the number of power actors.

20. In each community, the following problems were noted and serve as the basis for comparison with water problems. Teayston: (1) public improvements and services, (2) schools, (3) recruitment of public servants, (4) finances, (5) planning, (6) housing and building, (7) urban renewal, (8) apathy, and (9) tax changes. Demain: (1) urban renewal, (2) finances, (3) public improvements and services, (4) schools, (5) planning, (6) apathy, (7) slum clearance, (8) transportation, (9) rapid growth, and (10) airport. Lowell: (1) industrial and economic development, (2) schools, (3) public improvements and services, (4) finances, (5) social welfare, (6) recruitment of public servants, (7) urban renewal, and (8) absentee ownership; Jefferson: (1) public improvements and services, (2) finances, (3) housing and building, (4) schools, (5) industrial and economic development, (6) social welfare, (7) urban renewal, and (8) metropolitan government.

21. In coding these answers the basic criterion for classification concerned the number of intervening steps or degrees of direct causal imputation inherent in the problem definitions. For example, causes were classified as "specific" if the power actors offered concrete factors as being the causes of the problems. In their definitions they specified exactly what conditions were bringing about the problem. In other words, there existed k a fairly direct association between the specific cause and the problematic effect. In the case of "general" causes, however, the association was much less direct; several intervening factors, steps, and relationships appeared to be missing. The imputation of cause to such factors as "moral decline," "apathy," "greed," or "growth" are examples of such general causes.

22. See Wenger, "Comparative Model," pp. 253-257.

Part B:

Factors in the Community

Perception of Water Resource Problems

Introduction

In recent years, certain aspects of the "ecological crises" have become salient public issues. This rather recent attention to what are otherwise not so recent conditions would suggest the necessity of attempting to understand how conditions can be defined as problematic. More specifically understanding how communities and, in particular, how leaders within these communities perceive and define community problems is essential to understanding the subsequent action or inaction in such issues of public policy.

This paper, part of a larger study, focuses on the way in which power actors within communities define problems, including water related problems.[1] Power actors are those individuals within the community leadership pool who control the resources which aid or abet the attempts to solve problems. This superordinate power, which is held by certain individuals, involves the control of relevant resources, such as money and credit, jobs, the mass media, knowledge, votes, specialized skills, etc. Such resources have the capacity to affect processes in the social system and, therefore, to affect change. The extent to which such power actors are aware of problems, the nature of their perception and their definition of these problems are issues of relevance for those attempting to initiate change.

By community problems, we mean those current or future conditions perceived to be present or likely to occur within the community social system that are defined by the power actors as being dysfunctional and as requiring amelioration. It can be suggested that water related problems are well suited for the analysis of perception and response. They are generally characterized by gradual onset and extended duration which does provide time for planning

and action. On the other hand, these same characteristics make them much more difficult to perceive.

Here we will be primarily concerned with two dimensions. First, how does the collective definition of problems relate to the more objective conditions which have to be defined? In other words, is there some fit between the objective conditions within the community and their definition as being problematic? Secondly, do community leaders perceive water related problems in the same fashion that they do other community problems? Or, are water resource related problems seen as being qualitatively different from other types of community problems?

The study design involved, first selecting communities having different kinds of objective water related problems as sample units. Secondly, it involved the development of techniques of identification of the power actors within these communities. Thirdly, it involved the development of interview techniques which elicit conceptions of salient community problems, their causation, their seriousness as well as proposals for their solution.

Methods

A. Selection of Communities

The first task was to select communities which were similar in certain respects but also differed in terms of certain other objective conditions. Each of the communities was to be within the 10,000 to 25,000 population range; relatively autonomous, i.e., not closely linked to a neighboring metropolitan area; and a county seat. As contrasted to these controls, these communities were to vary in terms of the presence or absence of several different forms of collective stress: (1) one community subject to recurrent flooding, which had

developed a disaster culture;[2] (2) one community subject to recurrent flooding

which had not developed a disaster culture; (3) one community faced with objec-

tive evidence of water pollution; (4) one community with objective evidence

of water depletion; and (5) one community with little objective evidence of

stress from flooding, depletion, and/or pollution. Within the limits of our

sample criteria, no community in the state with a water depletion problem

could be located. Our sample cities, given pseudonyms here, were Demain --

flooding with disaster culture (1960 population 16,847); Teayston -- flooding

without a disaster culture (11,059); Lowell -- pollution (10,585); and

Jefferson -- our control community (12,388).

B. Techniques to Identify Power Actors

Since there are several ways in which to identify power actors, our

combined reputational-positional approach involved several steps. First, three

community knowledgeables -- the county extension agent, the president of the

chamber of commerce, and the newspaper editor -- were asked to identify indi-

viduals in each of the communities who were influential in "general community

affairs." In addition, they were asked who was influential in specific insti-

tutional areas, such as business and industry, schools, religion, local govern-

ment, health and welfare, etc. From these original nominations provided by

the community knowledgeables, names of those who had been mentioned at least

twice were included in the initial list. In an attempt not to overlook other

power actors, the study was designed so that these reputed power actors were

also asked to name anyone else in the community that was influential but was

not included in the initial list. If certain names were repeatedly mentioned

in subsequent interviews, they were added to the list and interviewed. In

addition, two specific community positions were included in the leadership

pool. The mayor and the local newspaper editor were automatically included in the leadership pool since our initial findings indicated that these positions were important in a local system regardless of the abilities of the incumbents. A total of 76 power actors were thus identified in the four communities: Demain - 21; Jefferson - 21; Lowell - 18; and Teayston - 17.

A Leadership Pool Interview Schedule was developed and pre-tested. It was constructed to obtain information relevant to the structure, distribution, and exercise of power in the community, the power actor's perception and definition of general community problems as well as specific water related problems and their proposals to solve these problems. A field team interviewed all except two of the 76 identified power actors in the four communities. Only one refused to be interviewed; the other was out of the country. The interviews ranged from 45 minutes to almost four hours and averaged about one hour and a half. It should be emphasized that throughout the study, water related problems were always considered in the context of general community problems and that discussion of such problems had to be generated by the power actors rather than by the interviewers. The emphasis here will be on similarities among the four communities rather than differences among them.

The Findings

One of the major research questions was to determine if the power actors in the communities were aware of existing water related problems. If a problem is not salient to those in the leadership pool it is unlikely that they will utilize their social power and power relevant resources in order to solve it. To determine the salience of water related problems, the power actors were asked (1) what they considered to be the two major problems in the

community in the past five years, and (2) what they considered to be the major current problem. Each power actor, therefore, cited three problems. As Table 18 indicates, water problems were not salient to the power actors within these communities. A total of 222 problems were cited. Of these, only five or 2.2 percent were water related. Two power actors in Teayston

Table 18: The Salience of Water Related Problems to
the Power Actors in the Four Communities

City	Number of Perceived Problems	Number Citing Water Problems	Percent
Teayston	48	2	4.2
Lowell	54	2	3.7
Demain	63	11	1.6
Jefferson	57	0	0.0
Average	222	5	2.2

cited flooding as a problem. Likewise, pollution was mentioned twice in Lowell. In Demain, a city which undergoes flooding almost every four years, of the sixty-three problems, flooding was mentioned only once. Jefferson, our control city, had no water problems cited.

A more sensitive indicator of salience is the percent of the leadership pool which cited these types of problems at least once. Table 19 presents the percent of each leadership pool which cited water related problems. In Teayston, a community which experiences recurrent flooding, 87.5 percent of the power actors did not cite it as a community problem. At the time of the study, while the city of Lowell was being sued for polluting the local stream, only 11.1 percent of the power actors considered pollution as a salient issue.

-69-

Table 19: The Percent of the Power Actors in the
Four Communities who Cited Water Related
Problems as Important Community Concerns

City	Number of Power Actors	Number Citing Water Problems	Percent
Teayston	16	2	12.5
Lowell	18	2	11.1
Demain	21	1	4.6
Jefferson	19	0	0.0
Sample	74	5	6.7

For the three communities which had water related problems, only five of the fifty-five power actors or 9.1 percent cited them as being major. These five power actors were the newspaper editor and water superintendent in Teayston, the mayor and president of the Community Improvement Council in Lowell, and the mayor in Demain. For four of these actors, water problems were directly related to their vested interests and the fifth, the newspaper editor, recently had built a home on the banks of a local stream that often flooded. This would imply that water related problems are only salient to the power actors in the community if they are related to their more immediate vested interests.

Another aspect of problem definition was obtained when the various power actors were presented a list of problems and asked to judge whether the specific problems were (1) very serious, (2) fairly serious, or (3) not serious in his community. The list included the following problems: (1) industrial and economic development; (2) housing and building and urban renewal; (3) race and ethnic relations; (4) educational concerns; (5) health; (6) culture;

(7) public improvements and services; (8) social welfare, crime and delinquency; (9) water problems; and (10) recruitment of public servants. With data derived from this, several dimensions can be illustrated. In this format, the leaders tended to rank water problems as more serious than the overall rank of others. One factor important for problem solving, however, is the consensus within the leadership pool as to the degree of seriousness of particular problems. Conflict and disagreement over the degree of severity of local problems is likely to impede problem solving. To measure this dimension, an Index of Consensus was developed.[3] This index is a measure of dispersion and has a value from .000 to 1.000. If each problem was rated identically by every power actor, there would be complete agreement or consensus regarding the severity of the problem and the index would be 1.000. A value of .430 represents 43 percent of the maximum possible consensus. The results of this analysis are presented in Table 20.

Table 20: A Comparison of the Degree of Consensus Evidenced
by Each Leadership Pool Concerning the Severity
of Water and General Problems in the Four Communities

City	Water:Index of Consensus	Water Rank	General:Index of Consensus	General Rank
Demain	.286	2	.450	1
Jefferson	.333	1	.392	2
Lowell	.250	3	.367	3
Teayston	.000	4	.270	4
Average	.234	-	.380	-

They indicate that there is less consensus evidenced by the leadership pools concerning the water problems than there is concerning other community problems. With such a low degree of consensus, the initiation of solutions for water related problems is more difficult.

Another factor which was studied was the degree to which the power actors defined the local community as being able to solve a problem by itself at the local level. The leadership pool in each of the communities was asked a series of questions concerning the solution of problems which they had defined as being the most important. They were asked if such a problem could be solved by the local community or would outside assistance be required. Table 21 indicates that the power actors in the four communities do not perceive the local community itself as being able to solve the water related problems. The degree of local solvability seen in water problems (22.5 percent) is much lower than the degree seen in the other major community problems (55.9 percent). Only in Lowell where the local community is polluting the stream, do half of the power actors see the problem as solvable by the local community.

Table 21: A Comparison of the Degree of Local Solvability Inherent in the Problem Definitions of Water and General Problems in the Four Communities

City	Percent of Water Problems Defined as Being Locally Solvable	Water Rank	Percent of General Problems Defined as Being Locally Solvable	General Rank
Lowell	50.0	1	83.4	1
Jefferson	28.5	2	63.2	2
Teayston	7.1	3	43.7	3
Demain	4.7	4	33.3	4
Average	22.5	-	55.9	-

In the two flood cities, Teayston and Demain, belief in the solvability by
the local community is very low. It should be noted that while the perception
of the nature of solvability seems to be related to the nature of the problem,
there is a positive association between the belief in solvability of both
general and water related problems. Those communities which perceived the
highest degree of local solvability inherent in general problems were also
the cities which perceived the highest solvability in water problems. This
may reflect a more common collective estimate of the community's problem-solving
ability, regardless of the nature of the problem.

Certain community problems require the coordination of many different
institutional areas to implement action proposals. If successful implemen-
tation is contingent upon the involvement and coordination of many different
institutional areas, such as governmental, economic, industrial, and educational
institutions, the community is faced with a complex activity. If, however,
a solution can be undertaken by one or two institutions, the problems inherent
in coordination of many units can be minimized. Each power actor was asked
to identify which local institution(s) should be involved in action in order
to attain success and designate which institution(s) were responsible for
finding a solution. Their proposals were classified as either (1) requiring
coordination or (2) not requiring coordination. If a proposal required the
involvement of three or more institutional areas, it was classified as "requir-
ing coordination." The results are presented in Table 22 and indicate the
power actors perceive that the solution to water problems in these communities
does not require extensive institutional coordination. Only 7.2 percent of
the actors viewed institutional coordination as being necessary. These find-
ings may be more encouraging to those attempting to solve local water problems

Table 22: A Comparison of the Perceived Degree of Institutional
Coordination Inherent in the Proposed Solutions to
Water and General Problems in the Four Communities

City	Percent of Water Problems Requiring Coordination	Water Rank	Percent of General Problems Requiring Coordination	General Rank
Demain	14.2	1	35.3	3
Teayston	6.2	2	42.5	2
Lowell	5.5	3	44.4	1
Jefferson	5.2	4	31.5	4
Average	7.2	-	30.4	-

since it is perceived that such problems can be solved by the activity of one
or two institutions. Of crucial importance is which particular institutions
are perceived to be responsible and whether they control requisite problem-
solving resources.

In discussing possible solutions of community problems, the power actors
within the four communities were asked if their proposed solutions to problems
were (1) private, (2) public, or (3) a mixed private and public responsibility.
The percent of water and general problems that were defined as being solely
"public" concerns is presented in Table 23. It indicates that, as perceived
by the power actors, solutions to water related problems are seen as being
almost exclusively the responsibility of the "public" sector of the community.
Water problems are seen as a public concern by 80.2 percent of the power
actors while only 30.5 percent see the public sector as responsible for solving
the other community problems.

One additional comment should be made here. Other analysis shows that the leadership pools in Demain, Jefferson, and Lowell have a high representation from business and industry and a low representation of governmental officials. They are the communities which evidence the highest percentages defining water problems as being a public responsibility. This may indicate that the power actors within these communities have defined an institutional area which is subordinate in social powers within the community, as being solely responsible for solving these types of problems. Without the perceptions of the necessity of involvement of the non-governmental institutional areas which have greater power and control and greater problem-solving resources, local government will be severely handicapped in attempting to solve these water problems. Thus, outside assistance in the form of capital, knowledge, authority, material resources, and manpower may be needed.

Table 23: A Comparison of the Percentage of "Public" Responsibility
          Inherent in the Proposed Solutions to Water and General
          Problems in the Four Communities

City	Percent of Water Problems Defined as Public Concerns	Water Rank	Percent of General Problems Defined as Public Concerns	General Rank
Demain	90.4	1	47.6	1
Jefferson	89.4	2	26.3	3
Lowell	72.2	3	16.7	4
Teayston	68.7	4	31.3	2
Average	80.2	-	30.5	-

One final dimension can be included here. Do local actors perceive that the involvement of local organizations is requisite to a successful solution to local problems? In order to measure this dimension, the power actors were given a list of twenty local organizations and offices. They were asked to rate each organization's relevance to action proposals. Here we will be interested in determining if the same organizations are viewed as being important for the solution of both water and general problems. Table 24 presents the rank ordering of the ten highest ranked organizations whose support is viewed as being essential.

Table 24: A Comparison of the Rank Ordering of the
Ten Most Essential Organizations to the
Solution of Water and General Problems

Rank	Water Problems: Organizations	General Problems: Organizations
1	Mayor	Newspaper
2	Chamber of Commerce	Chamber of Commerce
3	Newspaper	Industrial Leaders
4	Industrial Leaders	Mayor
5	City Council	Merchants
6	Merchants	Financial Leaders
7	County Commissioners	City Council
8	Neighborhood Groups	Business Leaders
9	Financial Leaders	Church Leaders
10	Business Leaders	County Commissioners

Basically the organizations whose support is seen as essential are similar for both types of problems but local governmental representatives, such as

the mayor, city council, and county commissioners are ranked as being more essential to water problems than they are to other issues.

It is interesting to note here those organizations which are seen as being somewhat irrelevant to the solution of any community problems. These include school board, administrators and teachers, the Republican, Democratic, and American Independent Parties, the bar association, labor unions, farm organizations, as well as racial and ethnic groups.

Summary

The study explores the perception of community problems, including flooding and pollution, among community leaders in four different communities ranging in size from 10,000 to 20,000 population. Water related problems were considered in the context of other community problems which were defined by these leaders. Among these leaders, water related problems were characterized by low salience and by low consensus. In seeking solutions, these leaders see water problems as being less likely to be solved at the local community level and as necessitating extra-community assistance. They also see water related problems as requiring a relatively low level of community coordination and as being primarily the responsibility of the public sector. Local governmental leaders were seen as being more important in problem solving in water related problems than they were in other community problems.

FOOTNOTES: Part B

1. Dennis Wenger, "Toward a Comparative Model for the Analysis of Community Power: A Conceptualization and Empirical Examination" (Ph.D. dissertation, The Ohio State University, 1970).

2. The concept of a disaster culture refers to institutionalized adaptations including beliefs and attitudes as well as organizational and technological preparations which develop in certain communities subject to recurrent disasters. For further elaboration of the concept, see Russell R. Dynes, Organized Behavior in Disaster (Lexington, Mass.: D.C. Heath Publishing Co., 1970). While not relevant here, one aim of the study was to contrast the two communities with flooding problems.

3. The formula representing this index is $I_c = 1 - \dfrac{\Sigma D_I}{N_p \, D_{max}}$ where

   I_c = Index of Consensus; D_I = the dispersion of dissensus with each problem and is computed by $D_I = N - M_o$ where M_o is the number of the category and N_p is the total number of problems; D_{max} is the maximum possible dissensus and is computed by $D_{max} = N - N/3$ where N is the number of power actors.

Part C:

A Sociologist Looks at Water Resources Research

I suppose that the social significance of water did not really make an impact on me until several years ago when I was working on the staff of a UNESCO Center for Education in Community Development. The center, located in the United Arab Republic, acted as a training ground for the whole Middle East. Its prime concern was to develop techniques for community development, drawing on a number of specialities and disciplines. The people in public health there had been very concerned with the unsanitary conditions surrounding wells in the surrounding villages. This health hazard was overcome at great expense by piping water into the various dwellings. After this was accomplished, they found that still people preferred to obtain their water at the unsightly and unclean well. Why? In large part because drawing water was not just a task to be accomplished with dispatch; the well provided the major focus of community life when women came together to exchange the latest gossip and information as to the events of the village and the world. This was not something which could be accomplished in one's own dwelling, isolated from others. Drawing water was less important than was the occasion for getting together. This problem was finally solved when they piped the water to a central place within the village. Certain sanitation measures were instituted but the social values of coming together to exchange gossip was maintained. I mention this because what seemed to others to be a technical problem which could be solved by the application of existing knowledge was in effect a more complex problem. The collection of water was embedded in a specific set of social relationships. This was initially ignored and the initial solution was a failure. Only when the social values were understood could be technical values be achieved.

I want to touch on two different points here today. First, I want to briefly indicate the involvement or perhaps the lack of involvement of

sociologists in water resource problems. Secondly, I want to try to point to several areas of research where the payoff might be great, and then try to illustrate an overall conceptual approach that may be of value in looking at water resource problems.

First, it is evident that sociologists have paid little attention to water resource problems. There are many reasons for this.

a. There are few sociologists. One of my colleagues assures me that the sociologists are the smallest occupational group with a distinguishable name. Perhaps he exaggerates but he does point to the fact that the demand for sociologists today exceeds their supply. Staffing growing colleges and universities and involvement in more glamorous research opportunities drain off most.

b. There is little funding for research. While I know that the Water Resources Act of 1964 was broadly conceived as an interdisciplinary effort, I have the feeling that it has been less so in application. In the last annual report I could find only six projects which have any relation to sociological interests.

c. The lack of funding is perhaps less an absolute matter than a matter of lack of social science appreciation on the part of some involved in the actual granting process. It is my impression that many of the persons involved in the granting process come from engineering and/or agricultural backgrounds and training. Disciplinary blinders are to be expected but also such fields have a tendency to see sociology only as relevant in finding ways to implement policy. Because of this, they demand the projects be structured in the ways they see the world. What is quite appropriate to them, however, is often confining and tangential to the interests and research plans of most

social scientists. It is probable that social sciences which make a better

fit with the engineering model, such as economics, would more likely get

support. In any case, I am suggesting that one reason there are few sociolo-

gists involved is that theyseldom fit or prefer to fit their research interests

into this engineering model.

d. The little work on water resources which has been done has been the

work of rural sociologists. While I think they have made significant contri-

butions, I would also suggest that their focus on rural areas has perhaps dis-

torted the nature of the problem, by concentrating on a narrow geographical

focus. This focus has limited the range of sociological tools and concepts

which could be applied fruitfully.

The lack of previous and current sociological work on water resources

problems does not indicate, however, that sociologists have nothing to contri-

bute to understanding these problems. Let me go on to suggest a number of

possible sociological contributions. There are not, of course, summaries of

past research. In most cases I know of little immediately relevant materials

on these topics. I mention them only as possible lines of inquiry.

1. <u>Differential attitudes toward water</u>. I know of no systematic

study of attitudes people have toward water. Impressionistically, over human

history, water has probably been viewed along the whole continuum of evalua-

tion. It has obviously been associated with ritual purity and cleanliness.

And in the Western world, cleanliness has been next to godliness. But it

has also been associated with evil and the overcoming of evil. Movie makers

use rain, thunder, and lightning as the setting for evil to occur. Authors

of ghost stories do the same. On the other hand, Moses was told to protect

himself and his family from the flood which would cleanse the world of evil.

In areas where water is scarce, the Nile has provided a ribbon of fertility and an oasis has come to symbolize refuge. To others, where water is more than available in Johnstown, Louisville, and now in southern Ohio, it has meant trouble, death, and destruction. These are only a few of the more dramatic examples. My point here is that we do not know what attitudes persons have toward water. It would be my hunch that many persons involved in water resources work tend to view water as a scarce resource. It would also be my hunch that this is not the way it is viewed by many others. To others, it is an always available commodity. In a society that opts for citizen participation in decision making, attitudes are important.

2. _Differential use of water_. There are obvious differences in the use of water by different categories. There has been some research along these lines. Irving Spaulding found in Rhode Island that higher status households use more water than lower status households.[1] Among the indicators of status, house value and household income are more closely related to water use than are the education and occupation of the household head. The implications of this would be that prediction of the quantities of water to be used in suburban communities needs to be based not only on the number of people in these communities but also the variety and prevalence of socio-economic characteristics.

Other demographic characteristics, such as age, family size, region, urban location, etc. suggest themselves as possibilities for analysis. Implied here are not only differences in household use but recreational use. What social categories use water more frequently involved in recreational activities? It is obvious that boaters and fishermen are not distributed randomly in the population.

3. <u>Social trends have implications for water use</u>. If we knew more about existing attitudes and existing water usage, this information would be of value in projecting changed usage in the future. For example, if we know that younger people use more water than adults (and as a father of several teenagers, this is a generalization of which I am most certain), the projections of the age pyramids would anticipate increased water usage. If we could spot those who are most interested in water related recreation, the current projections about increased leisure could be interpolated. For example, it is generally known that increased leisure will most affect skilled and semi-skilled workers. These may be the population categories which spend more time in water related recreation. The same could be done in changed usage in certain social arrangements of farming. For example, does commercial farming use more water per acre than the equivalent use per acre on family farms? Long term trends in the changing nature of farming could be understood in terms of their meaning for increased or decreased use of water.

4. <u>Adoption of innovation</u>. In every industrial society, numerous new products and techniques are developed. Many of these have important implications for water resources but often they are judged solely in economic terms and the chances for acceptance are seen solely in terms of economic benefits. Over a number of years rural sociologists and others have developed an important body of knowledge concerning the adoption process. Who adopts new ideas and new products? What is the sequence of adoption? What types of inducements are most important at particular phases of the process? This knowledge has obvious implications in the adoption of new forms of farm practices -- particularly irrigation.

5. <u>Sociological bases of water rights</u>. A good deal is written about various water rights and their interpretation in the court system. Last year, your colloquium dealt with this. Many lawyers treat laws as given; however, sociologists have a different interest in the legal structure. Sociologists see laws as codification of earlier social arrangements. Perhaps it has been done, but I would like to see someone examine the various social conditions which gave rise to different legal structures in the U.S. Why are there east and west differences?

6. <u>Organizational problems relating to the implementation of water resources policy</u>. It would seem that one of the more fruitful areas of research is the investigation of the consequences of organization and organizational decisions. Let me just point to one aspect which has been studied. Philip Selznick's study <u>TVA and the Grass Roots</u>, showed how organization, ideology, and power operated to have certain unanticipated consequences.[2] The TVA claimed to have a special relation to the people of the region. It was close to the people, the grass roots, said its ideology. On the other hand, the TVA did not arise out of the expressed need of those in the area. Consequently, it was faced with special problems of adjustment. In order to come to terms with local and national interests, TVA practiced cooptation -- the process of absorbing new elements into the leadership or policy determining structure of an organization as a means of averting threats to its stability or existence. The significance of cooptation is not simply that there occurs a change in or broadening of leadership and that this was adaptive. Cooptation is, however, consequential for the character and role of the organization or governing body. It results in the restriction of choice available to the organization and leadership. The character of the coopted groups necessarily

shapes the modes of action available to the total group. The force and direction of this effect may be completely unanticipated, particularly when positive social policy is coupled with a commitment to democratic procedures. More specifically, in order to gain support the TVA cooptated informally the land grant colleges and other agricultural intersts as a conservation measure, thus effectively contributing to the alteration of the initial policy of the TVA. Selznik's study is particularly applicable in situations where social planning and democracy go hand in hand. It provides an explanation for how the best intentions are "subverted" not by evil men but by earlier organizational decisions and processes.

7. <u>Community reactions to water resource problems</u>. One other possible approach which might be fruitful is to look at water resource problems in the context of community problem solving. One way to view problems of water depletion and pollution is to see them as forms of collective stress on particular communities. Sociologically, collective stress can be defined as a large unfavorable change in the inputs of a social system. Disasters, such as earthquakes, hurricanes, and floods provide the clearest example of sudden changes in the physical environment which provide collective stress for particular communities. Other changes which take a longer time to develop, such as water pollution and depletion, still produce stress.

Communities obviously differ in the degree to which they perceive certain problems as being a serious threat to their welfare. Collective awareness of the seriousness and relevance of a particular situation is perhaps a necessary pre-condition for the mobilization of any type of community action. It would be useful to determine the assessment of local decision makers as to the importance of water resources problems which face their communities. The

salience of water resources problems, however, would have to be seen in the wider context of other problems of the community. It could be hypothesized (for most communities) that water resource problems would have low salience.

Collective stress produced by sudden impact often evokes emergency actions. Those which occur over a longer period of time produce a paradoxical situation. Long term changes, in contrast to sudden ones, provide the time for planning and action to cope with the developing situation but, on the other hand, they are most difficult to perceive by community members and perception of stress is perhaps a necessary condition for planning and action.

In effect, I am suggesting that it would be useful to assess the perception of the relative seriousness of various community problems as seen by influential people within these communities. In addition, it would be useful to see how these differential definitions translate themselves into various forms of community action. The exploration of community problem solving would seem to be essential to understand the potential implementation of water resource policy.

8. The exploration of policy assumptions and implications. Sociological research may also be useful in raising questions about implicit assumptions and values embedded in policy. The questioning of policy assumptions is risky, but it is also necessary in a society committed to democratic processes and the free expression of ideas. To illustrate, an example can be drawn from a question which can be raised about the assumptions of conservationist policy. This question would also apply in part to assumptions about water conservation. Some of the material on water resources shares with most of the other conservationist writings an implicit assumption. They are postulated upon an ideal of a self contained agricultural-industrial system, in which the nation is

assumed to be essentially dependent upon the physical resources lying within its own sovereign territory. One need only to glance at import statistics to appreciate how much we have already departed from that ideal, if indeed it does represent a desirable goal. Thus, one may laud the admirable motives and the sense of public responsibility that permeates this literature but still judge it unrealistic of the present situation. Like it or not, urban industrialism is postulated upon a world-wide network of interdependent relationships, economic as well as political and any conception of the environment that confines it to our national borders is unrealistic to the extreme. Any policy that is based upon this incomplete appreciation of the actual extent and nature of our extended environment is liable to be defective.

In sum, what I have tried to suggest is that water as a commodity has to be seen in a social context. Water resources policy also is made in the context of local and national decision making -- a social process. Sociologists have certain conceptual tools and methods which provide a type of understanding. These can be best utilized if sociologists are not forced to conform to policy givens or to conceptual models which are normative in other fields, particularly applied fields. Water is a many-faceted phenomena and understanding it is not exhausted by its agricultural and industrial uses. Perhaps the final word should be left to Kenneth Boulding's little verse.[3]

> Water is far from a simply commodity,
> Water's a sociological oddity,
> Water's a pasture for science to forage in.
> Water's a mark of our dubious origin,
> Water's a link with a distant futurity,
> Water's a symbol of ritual purity.

Water is politics, water's religion,
Water is just about anyone's pigeon.
Water is frightening, water's endearing,
Water's a lot more than mere engineering.
Water is tragical, water is comical,
Water is far from the Pure Economical.
So studies of water, though free from aridity,
Are apt to produce a good deal of turbidity.

FOOTNOTES: Part C

1. Irving A. Spaulding, <u>Household Water Use and Social Status</u> (Agricultural Experiment Station, University of Rhode Island, Bulletin 392, 1967).

2. Philip Selznick, <u>TVA and the Grass Roots</u> (New York: Harper and Row, Torchbook edition, 1966).

3. Kenneth E. Boulding, "The Economist and the Engineer: Economic Dynamics of Water Resource Development," in Stephen C. Smith and E. N. Castle (eds.), <u>Economics and Public Policy in Water Resource Development</u> (Ames, Iowa: Iowa State University Press, 1964), p. 86.