WASH Technical Report No. 92

Making Interdisciplinary Teams Work: A Guide for
Team Leaders and Technical Assistance Managers

by

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CONTENTS

About the Author i

Acknowledgments iii

1. Introduction: How This Guide Came To Be 1

2. Towards a Theory of Interdisciplinary Teamwork 7

3. Setting the Stage for Interdisciplinary Work 13

4. Ten Best Practices of WASH Team Leaders:
   Specific Actions That Improve Results 23

Appendix A: List of Persons Interviewed 45

Appendix B: Bibliography 46

Appendix C: Advisory Committee 47

Table 1. Contrasting Dimensions: Multidisciplinary versus
Interdisciplinary Approaches to Technical Assistance Assignments 3

Figure 1. Paradigms Influence Our View 9

Figure 2. An Interdisciplinary Approach to Development Work 11

Figure 3. Phases of an Interdisciplinary Field Assignment 23

ABOUT THE AUTHOR

Claudia Liebler has been involved in the international development arena for fifteen years. Combining her expertise in management and organizational strengthening with her expertise in development work, she has provided technical assistance to many international development organizations and firms and has worked in eighteen different countries in Europe, Africa, Asia, and Latin America.

Her areas of interest include the development of high performing work teams, action training, innovative approaches to organizational development, and strategies for building participation, collaboration, and commitment both within and between organizations. She has worked across sectors and with professionals of many disciplines including agronomy, agricultural extension, engineering, public health, medicine, and economics, to name a few.

Miss Liebler has been a WASH consultant for the last decade carrying out WASH field assignments as well as conducting many Team Planning Meetings and Project Start-up Workshops.

ACKNOWLEDGEMENTS

I wish to acknowledge the twenty-four team leaders and managers who were interviewed for this project for their contribution to this work. They are all co-authors of this guide for it is their “best practices” that are presented here. Their willingness to share their insights and experiences in the spirit of building our knowledge about high-performing interdisciplinary teams has made this work possible.

A special acknowledgement goes to Diane Bendahmane of the WASH Project. As the task manager for this effort, Diane worked with me in the spirit of true colleagueship. Her constant encouragement and support, her ideas about this work, her straightforward management style, and her considerable writing and editing abilities, all added significantly to the final product.

Throughout the work I benefited from the advice and counsel of the advisory committee set up to assist with the conceptualization and development of this guide. The committee was made up of three WASH staff members—Craig Hafner, Fred Rosensweig, and May Yacoob—and Peggy Meites from the International Science and Technology Institute, one of the organizations in the WASH consortium.

In the end, what we all hope for is to make a difference in people's lives through the delivery of quality short-term technical assistance to developing countries. Every technical assistance assignment is an opportunity for a team to make a contribution. I believe that by putting in the extra effort to challenge ourselves to become high-performing interdisciplinary teams, we can make that difference. It is our choice to seize the opportunity and to become the stewards of a larger vision of what an interdisciplinary team is capable of. All of us are interested in doing our best professional work. It is my hope that this guide can make some small contribution towards that aim.

— Claudia Liebler

1.

INTRODUCTION: HOW THIS GUIDE CAME TO BE

Background and Context

During the first decade of the Water and Sanitation for Health Project (WASH), from 1980 to 1989, technical assistance teams were likely to emphasize only traditional engineering approaches to water supply development. But as sector professionals have learned more about all the elements that must be in place for improvements in water and sanitation to be long_lasting, technical assistance teams have come to include a much wider range of specialties. For example, development problems initially conceived as purely technical in nature have grown to be fundamentally linked to institutional contexts. Having seen many systems falter once donor support is withdrawn, sector professionals have concentrated on known elements of sustainability: strong institutions, adequate financial support, community involvement, education of the public, and so on. Hence, a technical assistance team might include, in addition to an engineer, an anthropologist, an institutional development specialist, and an economist. For example, a WASH study of how to increase private sector participation in urban water supply in Indonesia was completed by a team composed of engineers, financial analysts, specialists in public policy and administration, and legal experts.

"The compartmentalization of knowledge creates a false sense of confidence. For example, the traditional disciplines that influence management . . . divide the world into neat subdivisions . . . But the boundaries that make the subdivisions are fundamentally arbitrary. . . . Life comes to us as a whole. It is only the analytic lens that we impose that makes it seem as if problems can be isolated and solved. When we forget that it is only a lens, we lose the spirit of openness." **Peter Senge, *The Fifth Discipline***

The trend toward teams comprising multiple disciplines is bound to intensify as our understanding of the complexities and inter-relatedness of global development problems grows. Our landscape has become much more varied as we deal with an "urbanizing" world in which problems are more difficult to unravel, as we explore various levels of involvement with the private sector, and as we discover the links between water and sanitation and other environmental health problems. In the future, technical assistance teams will undoubtedly be large, on average, and more diverse.

Donors and host countries have come to rely greatly on multidisciplinary technical assistance teams to perform a number of tasks including conducting sector assessments, designing projects and programs, helping with project start-up efforts, carrying out evaluations, and many others. The WASH Project has been using short-term multidisciplinary teams for some time now, but has only fairly recently begun to address the difference between multidisciplinary and interdisciplinary work.

The definition of an interdisciplinary approach used here is as follows: A process through which parties that see different aspects of

a problem can constructively explore and communicate their own piece of the puzzle to other parties and together search for solutions that go beyond their own separate, limited visions of what is possible. An interdisciplinary approach differs from a multidisciplinary approach in several important dimensions, such as objectives, assumptions, role of team leadership, team processes, attitudinal frame, communication patterns, and results. Table 1 sets out the differences between the two approaches.

The challenge is to turn teams representing multiple disciplines—multidisciplinary teams—into interdisciplinary teams, teams in which multiple disciplines go beyond merely working side by side to working in an integrated, synchronous fashion. Such teams are greater than the sum of their parts. The "value added" of using an interdisciplinary approach shows up in the results:

- A holistic, systems view of the situation/problem that avoids oversimplification and generalizations.
- Reports written so that they can be understood across disciplines and by non-technical managers.
- Strong supportive evidence for taking action.
- Integrated solutions and plans that take into account linkages and interactions among the technical, managerial, political, and human elements in the situation.
- New techniques and innovations.

Taking the time and effort to use an interdisciplinary approach is not only worth it but, in this decade of political, economic, and technological opportunities, it is critical. We must redouble our efforts to tap the vast potential of science and technology in order to uncover new means for solving the most difficult problems. It is hoped that this guide will help WASH consultant teams and the teams of other development organizations meet that challenge.

"The key ingredient for true interdisciplinarity is interaction. This interaction invariably leads to synthesis and synergism. Synthesis of knowledge among interacting disciplines produces new ideas, concepts, and solutions. This productive interaction is called synergism. Synergism implies that the whole is greater than the sum of the parts. A distinction should be made between multidisciplinary, which simply means a combination of disciplines, and interdisciplinary which implies a combination of disciplines with frequent and significant interaction." **W.W. Shaner, *Farming Systems Research***

How This Guide Originated

From its earliest years, the WASH Project has espoused an interdisciplinary approach to technical assistance. The emphasis may have been on engineering solutions, as noted above, but health educators and human and institutional resources specialists also had their role on the WASH team. As the project has evolved, the number

Table 1
Contrasting Dimensions:
Multidisciplinary versus Interdisciplinary Approaches
to Technical Assistance Assignments

	Multidisciplinary	Interdisciplinary
Objectives	• To coordinate the inputs of several disciplines to solve a problem. • To work within each person's paradigms. • To harness individual excellence.	• To integrate the inputs of several disciplines to find innovative solutions. • To bring about a paradigm shift. • To work for collective success.
Role of team leadership	• Pulls together/coordinates disparate inputs. • Creates final product from inputs provided.	• Encourages team members to integrate their ideas and solutions. • Manages the team's creation of final product.
Team processes	• Uses the language of each discipline. • Shares information. • Accepts as given team members' conclusions.	• Develops a common language. • Tests assumptions. • Strives for full understanding of each other's perceptions and conclusions.
Attitudinal frame	• We are doing something that has been done many times. • “This is the way the ministry has always done it.”	• We are creating something new. • “We may be able to come up with a new strategy.”
Communication patterns	• Avoids disagreement • Avoids challenging or questioning one another.	• Allows disagreement. • Conducive to developing a spirit of inquiry.
Assumptions	• Problems have multiple causes. Each member will solve one aspect. • Members pay attention to their own piece of the puzzle. • There is a hierarchy of disciplines.	• Problems have multiple causes that require integrated solutions. • Each member must get involved with the total puzzle. • Each discipline is equal.
Results	• Compartmentalized solutions.	• Integrated solutions.

of disciplines involved has increased to include financial management, risk assessment, law, public management, epidemiology, information management, and so on. WASH now has a great deal of experience in fielding teams that represent various disciplines.

One important ingredient in WASH's success has been the institutionalization of the two-day team planning meeting, or TPM. Instructions for the TPM can be found in WASH Technical Report No. 32, “Facilitator Guide for Conducting a Team Planning Meeting.” WASH will not field a team unless it has been through a TPM. While WASH is one of the first development organizations to adopt the TPM as standard management practice, many other organizations, such as A.I.D.'s Office of Private and Voluntary Cooperation are using the methodology as part of their own operations.

As originally developed in the early 1980's by the Development Program Management Center (DPMC) of USDA's Office of International Cooperation and Development, the TPM is an organized process in which the team members come together in a concentrated effort to define and plan their work and to mobilize themselves to accomplish it. As such the initial TPM covered the planning period only, not the actual fieldwork.

“To do good interdisciplinary work you have to be very strong in your own discipline. You have to be willing to defend your own disciplinary perspective to the degree you believe it to be accurate. It is a matter, not of right or wrong, but of understanding or not understanding. If you can't make other people understand your point, then you need to focus on making it more understandable.”
David Levine*, Management Development, Independent Consultant*

Over subsequent years, through a range of efforts supported by USDA, A.I.D., and other donors, the TPM concept has been expanded. The resulting Team Planning Methodology, also referred to as the “TPM”, has been applied well beyond initial planning efforts, both domestically and internationally, to frame, shape, strengthen, and sustain long-term efforts involving multiple stakeholders and multiple level development. It has also become apparent that the basic TPM elements can be used to guide effective team management in the field. As a result, WASH staff felt that a guide that covered the fieldwork phase also was needed, especially given the difficulties but necessity of carrying out work in a true interdisciplinary fashion. Hence the present report, which is based on the experience of WASH's most effective teams and team leaders.

When the TPM was first introduced, WASH had to sell the concept to clients and to look for opportunities to try it out with those who understood its potential. Eventually WASH gained enough successful experience with the TPM to feel confident about making it a requirement. In fact, WASH clients now have come to expect that all WASH consultant teams will have had the benefit of a TPM before beginning work. Many suggestions about how the TPM may be used as a starting point for making interdisciplinary teams work are given here.

This new guide will probably go through much the same process the TPM did in its infancy: at first activity managers will have to sell the idea that increased emphasis on collaboration among disciplines will result in improved team performance and task outcomes, but after a time that notion will be as accepted as the TPM is today.

How This Guide Was Compiled

The main source of information for this guide was a series of interviews of WASH staff and consultants and some professionals from other organizations with experience as interdisciplinary team leaders. The names of those interviewed are listed in Appendix A. In addition, the author consulted a number of professional works, which are listed in the bibliography, Appendix B.

An advisory committee made up of WASH task managers and a staff member from one of WASH's subcontractors met periodically to assist the author to conceptualize the guide, to suggest sources of information, to discuss the major elements of the guide, and to review the draft manuscript. The names of those who served on the advisory committee are given in Appendix C.

Who Should Read This Guide

This guide was written with the technical assistance field team in mind, although portions will be applicable to almost any effort that requires the expertise of an interdisciplinary team. It has two main audiences: the leader of an interdisciplinary team and the person in charge of coordinating and managing the technical assistance assignment—in WASH parlance that person is called an activity manager or task manager. The guide focuses on what each of these two audiences can do to promote and facilitate interdisciplinary teams to perform at a high level.

In addition to team leaders, members of interdisciplinary teams will also find the guide useful. It should make clear the principles upon which an interdisciplinary approach is based and give them some tools to make it work.

How This Guide Should Be Used

The first two sections of the guide contain background information about the guide and about the interdisciplinary approach. The third and fourth sections comprise the guidelines.

The text is laid out for easy reference with an abundance of bulleted items, subheads, and text boxes. The marginal columns contain text that complements the main text. Most of the marginal text consists of quotations from the many who were interviewed in preparing the guide. Also a part of the marginal text is a section called "Tools and Techniques" for each of the practices in Section 4.

"The mindset of team members may be: `I'm doing my job and doing it well.' The collective product is not addressed. In the academic environment, emphasis is on the individual and the product of the individual. That is what we are evaluated on. That is important but ultimately secondary to the success of the team. We do acknowledge and even reward individual efforts, but the overall determinant of success is not what the individual has done but what the team has done." **Jim Kocher, *Research Triangle Institute***

Unlike the TPM guide, this guide does not lay out a step-by-step process. That approach would be infeasible, given the uniqueness of field situations. Instead, the guide offers specific actions and tools for effective interdisciplinary work.

The purpose of the guide is not to structure or regulate the team's work in a manner that seems stilted or burdensome, but rather to capture the imagination of team leaders and members and encourage them to experiment with new ways of operating and to discover their own best practices.

All WASH activity managers should familiarize themselves with the guide and then refer to it in more detail when they are given responsibility for a task that requires an interdisciplinary approach.

The guide should be sent to all potential candidates for interdisciplinary teams, especially leaders of such teams. Reading the guide will give them a chance to see what standard of work WASH wishes to maintain and may enter into their decision on whether to join the team.

Once the team leader is selected, he or she should review the guide carefully with the activity manager and decide how the suggestions in it may be applied to the technical assistance activity at hand. Once fieldwork is under way, the team leader should seek to implement as many of the suggestions in the guide as possible.

As will be seen in Section 3, one very practical use for this guide is to assist activity managers and other project personnel to decide which technical assistance assignments can benefit most from interdisciplinary attention.

2.

TOWARDS A THEORY OF INTERDISCIPLINARY TEAMWORK

Interdisciplinary Values and Beliefs

Throughout this guide, certain values inherent in the concept of an interdisciplinary approach are promoted. These include considering the opinions of all who will be affected by project decisions, as well as the expertise of all disciplines involved. Other values intrinsic to interdisciplinary work are an openness to innovation, the measuring of success based on collective rather than individual work, working toward sustainable solutions, a belief in the collective intelligence and the use of collaborative work styles, and flexible thinking. When teams pay attention to these values, they not only achieve their work but also make a statement about what is important beyond the technical completion of the task. The most important of these values and beliefs are listed below.

All disciplines are equal. An interdisciplinary team should maintain no hierarchy of sciences. It is not helpful to hold on to beliefs about the position and power of one discipline over another. There is no place for members who believe hard sciences are more valid than soft sciences or vice versa; all disciplines are equally relevant. This is true even though in some assignments one specialty may be more prominent than the others. Stereotypes that limit vision and constrain creativity are unacceptable.

"Dialogue can only occur when a group of people see themselves as colleagues in mutual quest for deeper insight and clarity. . . . Colleagueship does not mean that you need to agree or share the same views. On the contrary, the real power of seeing each other as colleagues comes into play when there are differences of view. It is easy to feel collegial when everyone agrees. When there are significant disagreements, it is more difficult." **Peter Senge, *The Fifth Discipline***

Discovery and innovation. Teams that are open to discovery and innovation do not support watered-down compromises reflecting what everyone can live with. They do not pretend that everyone is behind the team's collective strategy in order to preserve an image of cohesion. Open-minded teams are able instead to support new and expansive patterns of thinking. They see the task ahead as an adventure, as an opportunity to innovate, to look for the larger picture that lies beyond individual perspectives, to work together to create something new.

Collective success. The ultimate measure of success for an interdisciplinary team is the collective product of the team. Individual excellence is important, but something more than a collection of excellent personal performances is expected from an interdisciplinary technical assistance team that is operating at its peak.

Sustainable solutions. All consultants hope that their efforts during a technical assistance assignment will make a difference. However, sometimes they focus on the short-term solutions rather than grappling with the more difficult long-term perspective. The interdisciplinary approach places a premium on finding sustainable solutions to complex development problems.

Flexible thinking. Flexible thinking is highly valued in interdisciplinary work. In order to think aloud together, team members must be willing to be influenced by each other, to consider new ways of interpreting data and events, and to hold "gently" onto their paradigms. New ideas can emerge only in a team environment that encourages flexible, expansive thinking.

Team intelligence. Valuing and believing in the collective intelligence is a cornerstone of interdisciplinary work. A team can be highly intelligent or rather dull, regardless of the intelligence and competency of its individual members. Doing good interdisciplinary work requires strong representation from each discipline, but having competent members does not guarantee that a team will be able to access its collective intelligence.

Collaborative work style. Collaboration is an important value in interdisciplinary work. True collaboration requires taking risks. All members must be willing to be challenged, confident enough to expose their own thinking, and willing to help others to understand their view. Members must value each other's contributions and trust that through collaboration each person's contributions will be maximized in a way that is not possible in an individual effort.

"It is important to establish a common conceptual framework as to what the problem is and what solution is going to work. For example let's say engineers measured how much water people were actually using and found out that people were using two to three times more water than the system was designed for. What is done with this information depends on your objective. An engineer might propose building a bigger system. An economist might suggest using a meter in an effort to get people to use less water. A health person might argue the more water the better."
Eddy Perez, Engineer, WASH

Interdisciplinary Principles

The conviction that a synergistic interaction among disciplines is important in approaching contemporary development problems is based on several principles, which are outlined below.

Development problems have multiple causes involving the interaction of technical, managerial, and human factors. This statement is obvious to anyone who has been faced with the awesome task of bringing about real change in countries of the developing world. The following quotation from "Partnerships for Global Development: The Clearing Horizon," a 1992 report of the Carnegie Commission, sums up the challenge: "Although there have been many achievements, the vastness of what remains to be done is apparent in every region of the world, including the cities of the

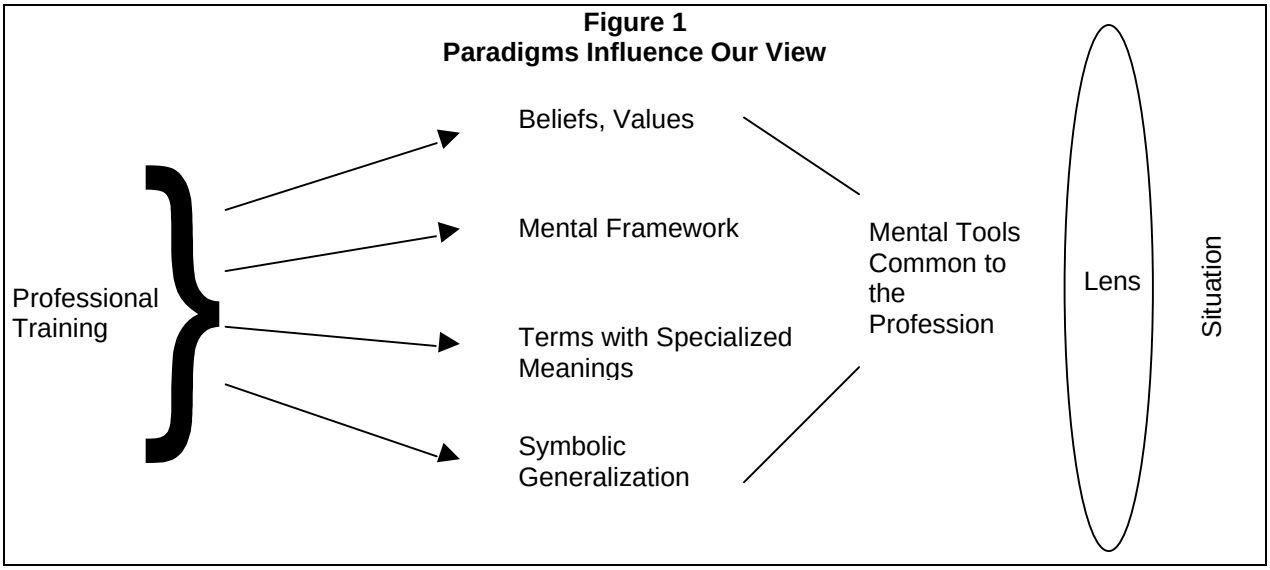
north. The hungry, uneducated, ill-clothed, and poorly housed outnumber the affluent in too many places. A billion people throughout the world remain impoverished, fishing out a bare existence at the margins of the vast global resource flows."

Interdisciplinary teams were born of the fact that problems have multiple causes. These problems call for integrated solutions. It is not enough or even desirable that each member of the team fix or solve one piece of the puzzle. A solution requires the combined perspectives of the team.

Technical solutions to the complex problems of our world today are not lacking. Each member of an interdisciplinary team has his or her own technical expertise to apply. What we tend to be less competent at are those processes and management requirements that enable an interdisciplinary team to use the various technologies each member brings in a holistic fashion that takes into account the total system.

Our paradigms influence our approach to development work. All specialists have been trained by their chosen discipline to view the world in a certain way. For example, because anthropologists assume that local factors are of prime importance, their approach to development starts with an analysis of the local situation. An engineer, on the other hand, believes that the procedures and routines of his profession may be applied anywhere. To him the local situation is not of prime importance. Divergent views on a scope of work within a team may reflect each team member's paradigms. Understanding more about team members' backgrounds and the assumptions that team members hold can clarify communication and increase the team's capacity for problem solving. Figure 1 shows how paradigms affect our view of the world.

Figure 1
Paradigms Influence Our View



Interdisciplinary approaches to work can be learned and improved over time. Teams do not automatically acquire interdisciplinary skills any more than a team member automatically acquires his or her own set of technical skills. It takes time, focus, practice, and commitment to become competent. As organizations build a stronger focus on interdisciplinary processes and skills into technical assistance assignments and continually incorporate the lessons they are learning along the way, they can look forward to bold breakthroughs in development work.

The interdisciplinary approach involves taking a systems view of situations in order to develop innovative, holistic solutions. Effective interdisciplinary teams are capable of seeing both the forest and the trees. They are able to understand interrelationships and patterns and to figure out where and how to apply leverage in the system to bring about change. Systems thinking is the integrative glue that allows an interdisciplinary team to bring divergent perspectives and skills to bear on a development problem.

Improving Interdisciplinary Performance

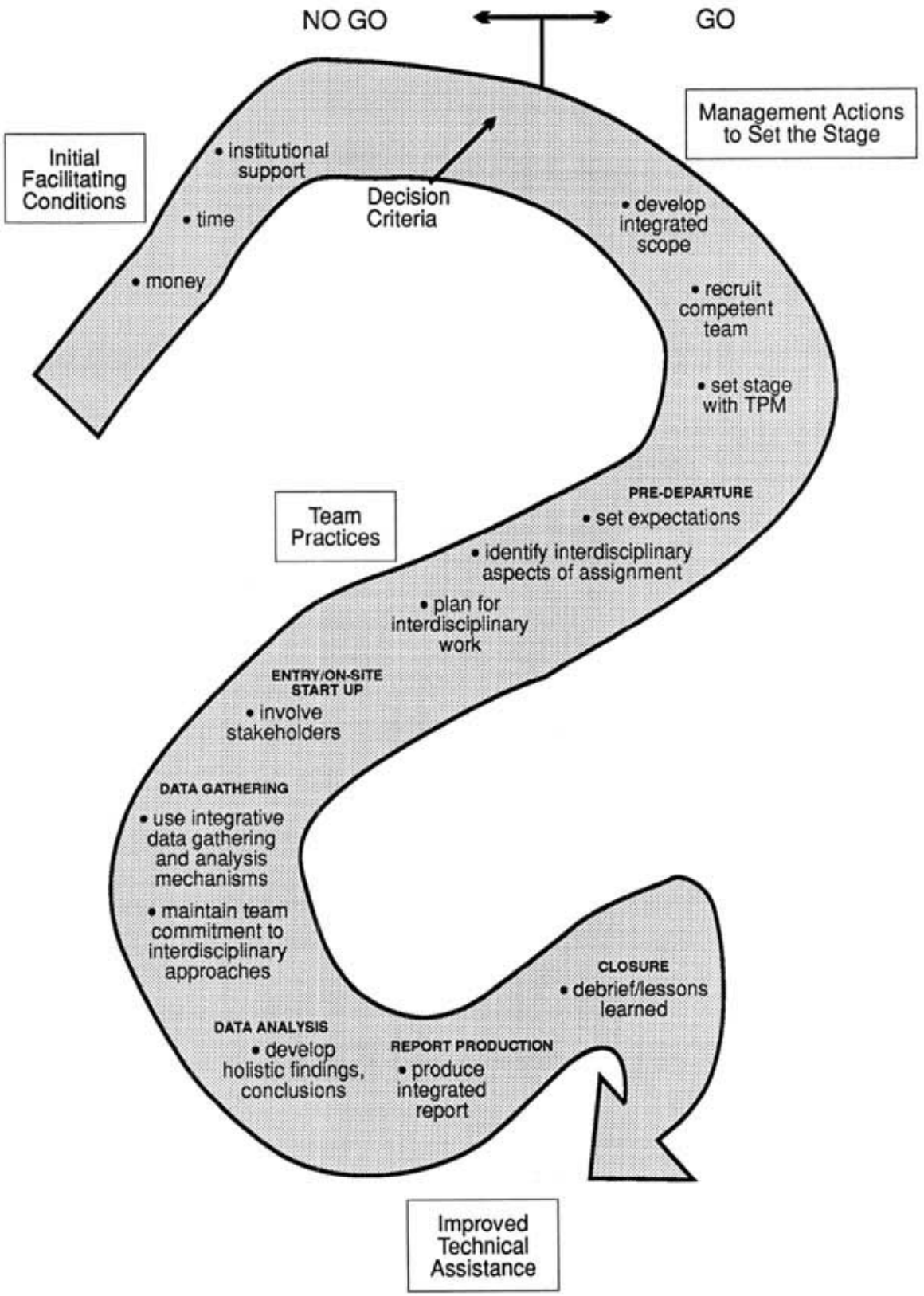
This guide lays out an approach to improving interdisciplinary performance and results that requires the support and commitment of multiple parties: the institution (in this case the WASH Project), the individual activity manager, the client, the team leader, and the team. Each has a role to play and specific actions to take in order to make an interdisciplinary approach effective on any given technical assistance assignment. This is shown graphically in Figure 2.

The institution must be willing to promote an interdisciplinary approach actively and make it a requirement for certain technical assistance activities. Much of the success of this approach depends on how committed the institution is to learning about improving the performance of short-term technical assistance teams.

An institution that is interested in innovation and in advancing the state of the art of development work will find many opportunities to learn more about interdisciplinary team-work. While many technical assistance assignments could benefit from using the practices outlined in this guide, because additional time and resources may be required, management must decide which activities should be designated for special interdisciplinary attention. The criteria set out in Section 3 can assist managers in making the choice.

"Decision makers need to realize that while interdisciplinary approaches may take more time and resources than disciplinary approaches, the interdisciplinary approach may be the only effective way to produce satisfactory results. In this sense, the interdisciplinary team can be truly cost effective."
W.W. Shaner, *Farming Systems Research and Development*

Figure 2
An Interdisciplinary Approach to Development Work



In the WASH Project the responsibility for setting the stage for an interdisciplinary approach at the specific assignment level falls on the shoulders of the activity manager. An important stakeholder in using this approach is, of course, the client. The activity manager must work with the client to “translate” a multidisciplinary task into an interdisciplinary one. This can require some ingenuity on the part of the activity manager. Four actions that an activity manager can take to optimize the possibilities that good interdisciplinary work will take place are given in Section 3.

The actual implementation of an interdisciplinary approach lies in the hands of the team leader and the team itself. In the end, it is the dedication of the team leader and team members to this approach that will make a significant difference in the quality of development assistance. The best practices given in Section 4 of this guide represent the cutting edge of the practice of interdisciplinarity.

Much has been written about teamwork, group dynamics, and multicultural teams but, in producing a guide focused on the dynamics of teams representing multiple disciplines, WASH is breaking new ground. As more teams struggle successfully with the difficulties of integrative work among disciplines, a more comprehensive theory of interdisciplinary teamwork will emerge.

3.

SETTING THE STAGE FOR INTERDISCIPLINARY WORK

With this publication, the WASH Project introduces into its mode of operation a mechanism for identifying those tasks that could benefit from a more focused interdisciplinary approach and then working with the client and the team to focus on the interdisciplinary nature of the assignment.

"The trend today is for water and sanitation to be viewed not in isolation, but as components of environmental health. If this trend continues, as I believe it will, the interdisciplinary challenge will become greater. It will mean larger teams and a greater mix of disciplines." **Craig Hafner, Social Scientist, WASH**

It is important to remember that almost all development problems require interdisciplinary solutions. In particular, water and sanitation development work calls on numerous specialties, including those that deal with its environmental, behavioral, financial, legal, managerial, social, and public administration aspects. Professionals who have worked successfully in the sector for some time have acquired an interdisciplinary approach that is almost second nature. Still, it is hoped that this guide will provide them with some new suggestions and perspectives.

Management Decisions

All teams—whether or not they are made up of persons from various disciplines—must learn to operate despite the sometimes widely divergent perspectives of their members. Even a team of five engineers will bring to their work different viewpoints about development, about people, about problems and possibilities. These are influenced not just by professional experience but by family, background, the part of the country they come from, and their cultural and class heritage.

However, there are differences in degree of collaboration among disciplines from team to team. Almost all activities will benefit in a general way if the insights of this guide are applied. But a few activities have a high potential for benefiting from a more focused interdisciplinary approach, in which some extra time and resources are allocated for integrating the team's work. Management must decide which activities warrant the full interdisciplinary treatment and which do not. Activities that meet the following criteria would probably benefit if integrated work were stressed.

The task is part of a serial or long-term buy-in. Such tasks tend to offer more opportunities for WASH to work out a long-term strategy with the client and to influence how things unfold. Also, more

resources normally are attached to these tasks for planning and start-up activities, thus facilitating an interdisciplinary approach.

Follow-up activities are anticipated. If the technical assistance assignment involves sending a team to the field for just five or six days, it makes little sense to emphasize integrated work. But if the assignment calls for a multi-week effort that entails follow-up activities, careful consideration of interdisciplinary strategies could be quite beneficial. Putting the assignment into a broader context and getting the client to articulate how the results will be used in both the long and short term help to inform the current strategy for an assignment.

"Obviously much time must be spent in open give-and-take discussion in clarifying team objectives. Communication in interdisciplinary teams must be open and continual. The first and foremost responsibility of the team leader is to ensure that this occurs, but each team member must make the extra effort to help. No clear choice as to the best way to achieve effective communication can be prescribed. However, one almost universal complaint from interdisciplinary teams is that the team members did not spend enough time during the initial stages of their work together." **W.W. Shaner, *Farming Systems Research***

More than one ministry/institution is involved. Multiple ministry involvement by definition calls for interdisciplinary skills. Tasks involving various ministries very likely need continually to integrate interdisciplinary perspectives as well as alliances between institutions that address problems too complex to be resolved by unilateral organizational action.

The client is open and receptive. The client (for WASH this is usually a U.S. Agency for International Development [A.I.D.] mission or bureau; in a more general sense it denotes the organization or person requesting the technical assistance) must be willing to view the technical assistance task from an interdisciplinary perspective. If a task appears to be a good candidate for an interdisciplinary approach, management should try to persuade the client that such an emphasis is appropriate. Such a proactive approach is not at odds with being responsive. The client may not fully understand what interdisciplinarity entails and what benefits it can yield. Discussing the issue can be a learning experience for the client. Nevertheless, the client needs to be sufficiently interested in effective team performance to be willing to consider strategies that will increase it.

The client is interested in putting fourth an extra effort to achieve excellence. If the client sees the assignment as strictly *pro forma,* there is little purpose in pushing integrated work. However, if the client shows interest in experimentation and the possibility of creating new solutions, taking an interdisciplinary approach that can lead to high-level team performance may be worth the effort.

The assignment allows adequate time for interdisciplinary work. Effective interdisciplinary work does not necessarily require much more time than the "normal" technical assistance assignment. What is important is how a team uses the time available to it. Nonetheless, the overall schedule cannot be so tight that teams are left scrambling to complete the minimum required within the available time.

The effort can support a team leader whose primary job is to manage the team. This question is particularly important for teams with five or more members. If a team of six is assigned a complicated task and a team leader is added to serve solely as a manager, this represents a 15 percent increase in personnel. But if that leader can make each team member only 5 percent more effective—not an unreasonable possibility—the team leader would pay for his or her presence on the team nearly twice over.

Counterparts are available. Counterparts can add significantly to the effectiveness of the team and make the benefits of an interdisciplinary approach more immediately relevant and replicable. Particularly in those assignments that involve more than one ministry, having counterparts on the team can help strengthen on going-implementation relationships. Also, the TPM might be held in the field so that an expanded team could get off to an effective start.

The criteria above should be used as a guide in making a decision about the extent to which integration among disciplines should be emphasized in a task. An activity does not need to meet all the criteria to qualify. Equally valid and important to factor into the equation are the activity manager's own judgment about what will work and professional interest in promoting an interdisciplinary approach.

Once the management decision has been made, the manager of a technical assistance activity should deliberately take the following actions, which are described in more detail in the next section: (1) Conceptualize and orient the task to maximize integration among disciplines, (2) develop an interdisciplinary scope of work, (3) recruit a team experienced in inter-disciplinary work, and (4) expand the TPM to promote integrated work. To complete these actions the activity manager must influence three stakeholders: client, team leader, and team.

How much influence can the activity manager have over the client and the team? Certainly it is important for the activity manager to ensure that the client's needs are being met. At the same time, many managers believe it is also their job to promote the lessons their organization has learned and to take an active role in shaping technical assistance assignments. The manager therefore faces the challenge of balancing the various and possibly competing interests involved.

If a technical assistance activity is earmarked for special interdisciplinary attention, this report should be used as a guide and

the budget for the activity should be reviewed to determine whether it can support what is needed to do the job. For example, it might be necessary to expand the TPM or to add to the team a consultant whose primary role is to manage the team. If, on the other hand, the activity involves several disciplines but is not earmarked for special interdisciplinary attention, the individual in charge, or the activity manager, should review this report and incorporate the ideas and suggestions that seem appropriate into the planning for the activity.

Once a decision has been made to move forward, the following actions, suggested by managers within and outside of WASH, can help set the stage for interdisciplinary work.

Activity Manager Actions

"A quality end product must start with the scope of work and with the TPM. A manager's role continues right through to the end of the task and should end with some assessment not only of how the team performed, but of the lessons learned about doing interdisciplinary work."
Eddy Perez, Engineer, WASH

It was the consensus among those interviewed for this guide that it is not up to the team leader alone to promote collaboration among disciplines. Equally important are the actions of the persons responsible for organizing technical assistance activities or tasks. Whatever their title, these managers play a critical role in preparing for interdisciplinary work. What they pay attention to in the early stages of negotiating and planning for an assignment can make a difference in the final product or result. As mentioned above, in some cases, stressing an interdisciplinary approach may add to the time necessary to manage an activity; in other cases it may simply mean that activity managers will spend about the same time managing but use the time somewhat differently.

Of the two key stakeholders activity managers target for attention—the team of consultants and the client—influencing the client is more demanding because it is the client's need that is being addressed and the client's money that is being spent. Conversely, WASH is in essence the team's client, and thus the team must consider the activity manager's priorities its own. Because the team is being hired by WASH, there is an opportunity from the beginning to clarify expectations.

The following sections outline four actions an activity manager can take to set the stage for effective interdisciplinary teamwork.

Action 1. Orient the Task to Maximize the Integration of Disciplines

Very often a task will meet all of the criteria for interdisciplinary emphasis and will only need someone with vision to recognize and articulate its potential. An activity manager who is predisposed to

detecting opportunities to maximize collaboration among disciplines will find many. Some ideas about how this may be done are given below.

Sell an integrated approach as a technique to improve performance. When they are performing effectively, interdisciplinary teams have a better than average chance of producing relevant, feasible solutions based on new ways of thinking about old problems. The only valid selling point for spending scarce resources on strengthening interdisciplinary approaches is improved performance.

Explore practical considerations. The activity manager should address the following practical considerations in focusing on an interdisciplinary approach. These should be worked out with the client. Although many of them are not exclusively interdisciplinary issues, they certainly are necessary conditions for good interdisciplinary teamwork.

The plan for the activity should be flexible and feasible. An interdisciplinary team must be given the proper tools with which to work. Two of the most essential are adequate time and flexibility. The following specific topics should be considered with the client:

- The length and location of the TPM. Are there benefits to holding the TPM on site rather than in Washington? Is the assignment one that would benefit from a slightly longer TPM?

- The degree of flexibility afforded the team to plan and execute its work. Providing the team with parameters and expectations about the overall time schedule, approach, and outcomes desired is critical.

- Conducting initial working sessions on site. Are there key on-site stakeholders who should be involved in some start-up working sessions with the team? These sessions may require advance preparation.

- The purpose and length of any proposed fieldwork. What are the client's expectations for the fieldwork? Is fieldwork merely to familiarize the team with the site? Will major data gathering take place? Has adequate time been allocated to fieldwork?

"In WASH's work there is no single paradigm. Instead there are alternative approaches, emanating from each of the professions represented on a team. If team members appreciate how their respective sets of assumptions influence the way they see the world, they can then appreciate better why their team mates may have different interpretations of the same event. A team that is aware of the sets of assumptions it holds can better examine them and test their relevance to the assignment at hand." **John Chudy, Consultant, Public Administration**

- Adequate time for using interdisciplinary approaches. Is there enough time in the overall plan, for example, to allow the team to share data with key stakeholders at the mid-point of data gathering and then to adjust its data-gathering strategy, share initial findings with the client, work to identify conclusions and develop new ideas and solutions to problems, and write an integrated report?

The team leader should be allocated time to play his or her role. If the budget will not support a full-time team leader, the technical role the team leader plays should not be so time-consuming that it jeopardizes the all-important team management function.

Counterparts should be identified to work with the team. If counterparts are to be actively involved, the client must begin to set expectations locally so that counterparts can make themselves available to work with the team.

Action 2. Develop an Interdisciplinary Scope of Work

A well-written scope of work can be a valuable tool for the activity manager, team, and client because it sets the direction, gives guidance, and states expectations. If integrated work is being emphasized, that should be reflected in the scope of work and an attempt should be made to articulate what the concept means for the team in terms of approach and expected results. The involvement of the activity manager in developing the scope of work can help to give it the interdisciplinary emphasis needed. Two ideas for achieving this are given below.

Help make the interdisciplinary orientation of the scope of work as specific as possible. Offering to help the client draft the scope of work allows the task manager to influence early on the direction of the work. This can be done by sharing with the client model sections of a previous scope of work or by responding to a draft the client has already prepared.

An interdisciplinary scope of work should include the following:

- expectations about an integrated final product,
- guidance on how the interdisciplinary team should operate,
- specifics about the role of the team leader, and

- a schedule with time built in to accommodate integrative work.

Enlist the help of colleagues when preparing the scope of work. The task manager should take advantage of the makeup of WASH's own core staff by collecting input from staff representing different disciplines. For example, after sharing some background information, the task manager could go around the table asking all staff members to comment on factors that should be considered in developing the scope of work.

Action 3. Recruit a Team That Is Sympathetic to and Experienced in Interdisciplinary Work

Perhaps more than any other action a task manager takes, the thoughtful selection of a team is the most critical, for the team's performance will ultimately determine the success of the technical assistance. Effective interdisciplinary teams must be open and willing to learn and consider diverse viewpoints. They also must maintain a respect for the project's process and the product. The following are some steps task managers can take to increase the chances of fielding a high-performing team.

Choose a team leader with strong team management experience. A team leader must know how to manage for interdisciplinary results. An anthropologist should not be assigned an engineering analysis and, by the same logic, a person with a minimum of managerial and leadership skills should not be chosen as team leader. In a short-term assignment in which time is of the essence, an active management style is likely to be more effective than a laissez faire style. Ideally, a team leader should exhibit the following characteristics, in addition to being qualified in his or her discipline.

"Putting a technical virtuoso in a leadership position sometimes works but often doesn't. There is no reason to assume that a good technician is a good manager any more than to assume that a good manager is also a good technician. Team leaders need to be chosen for their management skills as well as their technical skills." **Jerry Van Sant, Management and Organization Specialist, Research Triangle Institute**

An effective interdisciplinary team leader:

- is sensitive to differences among team members' disciplines,
- respects the knowledge of each team member,
- perceives situations holistically,
- uses a variety of participatory skills,
- is committed to the interdisciplinary approach,

- uses a collaborative style that enables others to contribute fully to the team's goals,
- promotes an appreciation for the differences among team members' disciplines and paradigms,
- is open to innovation and creativity,
- can instill the team with a shared vision,
- fosters open dialogue, and
- balances authority and flexibility.

"In most sports the coach does not play the game. His or her job is to make the team work. In technical assistance teams it is the norm for one of the players to double as a coach. This can result in a conflict of responsibilities. Often the team leader is overloaded with technical responsibilities. Coaching is not something that can be handled after hours." **Jim Kocher, Economist, Research Triangle Institute**

Recruit the team leader first. If the team leader is identified earlier than the other members of the team, it may be possible to get his or her input on the selection of the other team members. A carefully assembled team will be more likely to comprise members who are compatible with one another than a team that is chosen hastily. Also, when the team leader is involved in putting the team together, team members know when they walk in the door that they are on an equal footing and have the team leader's respect.

Select team members who are known to be able to collaborate. People vary greatly in their capacity and willingness to be collaborative. In addition to looking for professionals who are strong in their own disciplines, task managers should pay attention to candidates' teamwork skills. Team members must be able and willing to work with other disciplines. They must have some appreciation for effective team functioning and be ready to give their best to a team effort.

State WASH's expectations for interdisciplinary work. In initial conversations with potential team members the activity manager should begin stating WASH's expectations regarding interdisciplinary work. This is the time to check with team members about their willingness to meet these expectations. It is important that potential team members know, before committing themselves to the work, that WASH views the assignment as one deserving special emphasis and the team's best interdisciplinary efforts.

"Quality interdisciplinarity demands quality in the component disciplines, regardless of the disciplines of the team members. . . . Those who have a successful disciplinary record command the respect of others. Furthermore, a competent individual with a proven record is usually self-reliant and feels less threatened by interdisciplinarity, which often generated insecurity because it follows new courses of action or pioneers new technologies. Finally, the professional who is well-grounded in a discipline is in a good position to understand others' paradigms." **W.W. Shaner, *Farming Systems Research***

Action 4. Take Advantage of the TPM to Promote Collaboration among Disciplines

Activity managers can make good use of the current TPM model to launch an interdisciplinary team effectively. The TPM not only provides a forum to discuss the expectations for the assignment with

the entire team, but it also gives managers an opportunity to monitor how the team is addressing issues of integration and to intervene if appropriate. With only a few minor modifications in the TPM design, facilitators can help teams explore important aspects of their interdisciplinary makeup and how they can use it to their best advantage. In the TPM, the activity manager should carry out the following actions to promote collaboration among disciplines.

Restate WASH's commitment to an interdisciplinary approach. In the first session of the TPM, the task manager should review WASH's expectations about the importance that should be attached to interdisciplinary work. These were communicated to team members when they were recruited to join the team, but restating them at this juncture should help the team members understand that they were chosen partly because of their skills in interdisciplinary work. If the TPM is being facilitated, the facilitator should review the TPM design and identify those sessions and tasks that demand special emphasis.

Monitor the progress of the team in achieving collaboration among disciplines. As the TPM unfolds, the task manager and the TPM facilitator should constantly assess whether the team is getting off to a strong interdisciplinary start. The following questions can help assess how a team is progressing and what requires additional attention either during the TPM or later in the field.

- Are members able to articulate what an interdisciplinary approach means for this team?
- Can team members articulate linkages among their assignments?
- Is there a strategy for working with counterparts?
- Has the team begun to build a common vocabulary?
- Has there been some initial sharing of assumptions and disciplinary perspectives?
- Has the team developed an integrated data-gathering protocol?
- Has the team considered integrative strategies for gathering and analyzing data, developing findings, and making recommendations?
- Have ideas been discussed for producing the final product?

- Does the work plan allow enough time for integrative work? Have key work sessions been identified?

- Has the team developed its own guidelines for how it will work together?

Debrief with the team leader. Prior to the departure of the team, the task manager, TPM facilitator, and team leader should meet briefly to share observations about how the team is functioning and ideas about how to help it function better. This is also an opportunity for the task manager to underscore the importance of the team leader's role and give him or her support.

This chapter has concentrated on the role of the activity manager in setting the stage for interdisciplinary work. The next chapter looks at the role of the team leader in nurturing interdisciplinary results. It is through a partnership between activity manager, team leader, and client that the conditions for innovation can be created.

4.

TEN BEST PRACTICES OF WASH TEAM LEADERS: SPECIFIC ACTIONS THAT IMPROVE RESULTS

This section describes ten practices that WASH team leaders have used to help interdisciplinary teams get the most out of their diversity and improve the quality of their final product. The practices mainly focus on what the team leader can do in the field as the work of the consultants goes forward. However, in recognition that much takes place during the team planning meeting prior to the team's actual departure, both pre-departure and field practices are presented.

The field practices are further organized by the generic phases of work in a technical assistance assignment: entry and on-site start-up, data gathering, data analysis and strategy development, report production, and de-briefing/closure. These phases and practices are shown in Figure 3. Each practice is defined by describing specific actions that can be taken by the team leaders and for each action, "Tools and Techniques" are offered in the marginal text.

"Most of us at one time or another have been part of a great team—a group of people who functioned together in an extraordinary way—who trusted one another, who complemented each other's strengths and compensated for each other's limitations, who had common goals that were larger than individual goals, and who produced extraordinary results. I have met many people who have experiences of this sort. . . . Many say they have spent much of their life looking for that experience again." **Peter Senge, *The Fifth Discipline***

Figure 3
Phases of an Interdisciplinary Field Assignment

Pre-departure
- Set expectations and tone for interdisciplinary work
- Identify interdisciplinary aspects of the assignment
- Plan for integrative work

Entry and On-site Start-up
- Involve key stakeholders and adjust plan

Data Gathering
- Use integrative mechanisms for gathering data.
- Implement integrative approach to data organization, sharing, and analysis
- Maintain team commitment to interdisciplinary approaches

Data Analysis and Strategy Development
- Develop holistic and integrated set of findings, conclusions, and recommendations

Report Production
- Use an integrative process for producing the final report

De-briefing/Closure
- Share results and interdisciplinary lessons learned

Not all practices are equally relevant or appropriate to every team and situation. Every team is unique, and all team leaders will put their own stamp on the interdisciplinary approach in accordance with their style and analysis of what the situation and team require.

Precious little has been written about the important work of leading an interdisciplinary team. Good team leadership can make a tremendous difference in the quality of the final product, which, in turn, can have a direct effect on people's lives.

"A lot of people do multidisciplinary work just because scopes of work require an economist, an engineer, or a health educator. And somehow they end up with a coordinated project. But when disciplines work in an interdisciplinary mode on an assignment they end up with a final product that blends what the disciplines have to offer. That is harder to achieve. It's sort of like grafting branches from different fruit trees together and coming up with a new variety." **Fred Rosensweig, Management Development, WASH**

The role team members play also should not be overlooked. There are times when the official leader may call on team members to lead the team during a particular working session or team meeting. Beyond their technical skills, certain team members may possess excellent facilitating skills or have an idea of how to help the team over a rough spot.

In some teams the leadership role is fluid. It is passed around to various members who take it on when they have a contribution to make. It can be difficult to know who the official leader is at any given point because all members are both leading and following as the work unfolds. A strong team knows how to use all of its members well. High performing interdisciplinary teams have certain characteristics that make them unique:

- concurrence on and commitment to interdisciplinary objectives and strategy,
- realistic workplans and schedules that allow for integration,
- roles defined to highlight interdependent aspects,
- on-going mechanisms to monitor and coordinate work,
- frequent, open, and highly interactive communication,
- appreciation for others paradigms,
- innovative, creative thinkers able to pioneer new courses of action,
- understanding of the linkages between disciplines and how to complement one another's efforts,
- willingness to examine assumptions,
- ability to work collaboratively, and
- ability to critique and improve their own process.

These characteristics can serve as a model for team leaders, and team members as they strive for excellence in the delivery of short-term technical assistance.

The practices given below are not a set of guidelines that were written by a group of managers who thought that something needed to be done to "get teams into shape." Rather, they emerged from various team leaders' successful real-world experiences. As such, they represent a body of knowledge and practice that deserves to be disseminated. By sharing our very best practices we can foster yet more creative innovations in how we go about doing development work.

It is hoped that these ten practices not only affirm what teams already know and practice but also offer some new insights or tips.

Pre-Departure Phase

This phase takes place during the regularly scheduled TPM prior to the team's departure.

Practice 1. Set the Expectations and Tone for Interdisciplinary Work

Early on in the life of a team, the team leader should convey the idea that members of the team are about to be involved in a special effort to develop a capacity for thinking together and producing coordinated actions. Though team members will be expected to make an individual contribution in accordance with their specialties, the real payoff lies in what the team produces together. In an interdisciplinary team all members try to view reality from one another's perspective. In this way, they expand their own understanding of a situation and allow a more holistic picture to emerge.

Because development problems are interdisciplinary, it takes an interdisciplinary team that knows how to learn together to solve them. Several suggestions follow as to how to establish the tone for team learning and coordinated action.

Define an interdisciplinary approach and how it translates into team behaviors and procedures. Before anything else is done, the team should arrive at a common understanding of the term "interdisciplinary." The team leader can ask the team members to share their own definitions and then create a team definition that everyone agrees to. As another option, the team leader might present his or her own definition of an interdisciplinary approach as a way of opening up the discussion. It is also a good idea to discuss the differences between a multidisciplinary team, in which various disciplines work side by side, and an interdisciplinary team, in which

Tools & Techniques

Practice 1: Expectations & Tone

- *Team members write definitions of "interdisciplinary;" these are used to develop a team definition.*
- *Team members explore how this definition will impact their work.*
- *Then team members share their paradigms by discussing key assumptions about development, how they go about understanding a situation, and what data they consider important.*
- *Team members describe a time when they worked with a highly creative team that produced extraordinary results. They discuss what their team can do to encourage innovation.*
- *@ Each member suggests one ground rule that will help the team achieve excellence; the team discusses these & agrees on the ones they want to follow. (E.g. Use common language; suspend assumptions. See text box for examples.)*
- *Team leader shares views on the importance of colleagueship & how a belief in the hierarchy of science is not useful & explains the contribution expected from each team member.*

various disciplines seek to integrate their work. (Refer back to Table 1.)

In discussing the meaning of an interdisciplinary approach, it is important for the team leader to move from a theoretical discussion to asking three specific questions: “What does collaboration among the disciplines mean for us as a team?” “How will it affect the way we operate?” and “What is our vision of how it will affect our product?”

Exchange paradigms. The team leader should structure some activities to help team members understand and appreciate the disciplines represented on the team, particularly when it comes to how they influence the team members' approach to the assignment. Three topics would be useful to discuss: key assumptions of each discipline, what each discipline attempts to understand first about a situation, and the kinds of data each discipline looks for and why.

“Each team member carries his or her own predominantly linear mental models. Each person's mental model focuses on different parts of the system. Each emphasizes different cause-effect chains. . . . The team members genuinely represent the proverbial blind men and the elephant—each know the part of the elephant within his grasp, each believes the whole must look like the piece he holds, and each feels his understanding is the correct one.” **Peter Senge, *The Fifth Discipline***

Few people wish to work from unreliable information, yet that is the risk one takes in making false assumptions about a situation. The result is wasted effort and inhibited performance. When team members understand more about how other disciplines view the world, they can more readily accept and assimilate data that normally would not be a part of their analysis.

Team members need to challenge statements such as, “It won't work,” “The ministry will never agree to it,” or “This is the only way to go about solving this kind of problem.” Throughout the assignment if team members are able to identify and see more clearly the assumptions they hold, the assumptions can be tested and discussed and retained, temporarily suspended, or discarded.

Create enthusiasm for innovation. A team leader should point out when team members fall back on ideas or procedures of an earlier assignment. While there is nothing wrong with applying one's experience in another setting to the problem at hand, it is important that team members appreciate the uniqueness of the situation and wait until they fully understand the problem before they latch onto a solution. Each situation has possibilities that haven't been thought of yet.

“It is difficult for a team leader to reverse biases that people may have held for a long time. I've been on teams where people hold strong biases—`What is that economist trying to do?' or `Those engineers don't see beyond the end of their pencils.' In a complex project with many disciplines, the team leader might want to have the team explore what different disciplines do, what they worry about or lose sleep over or get excited about. A lot of times people just don't understand what other disciplines are about.” **Alan Wyatt, Engineer, Research Triangle Institute**

One way of encouraging creative thinking is to engage the group in “thinking aloud” together, in temporarily suspending assumptions, and in considering expansive ideas.

Develop Groundrules. Using a definition of interdisciplinarity (See page 2 for an example) the team can list the norms or procedures that it implies. One implication, for example, is that everyone on the team

must communicate in language others can understand; another is that enough time must be allocated in the work schedule for the team to reach creative solutions.

The text box on page 27 lists some suggested ground rules the team leader can use as a basis for creating with the rest of the team a set of norms to adhere to.

Build trust and respect. A team leader has the potential for making a major impact on the team. If a team leader is able to build enough trust within the team, members can stop worrying about competing with each other or getting their particular assignment completed and start focusing on how best to solve the problem or tackle the opportunity at hand. Anxious team members who are worried about their roles and responsibilities and whether they have earned the respect of others have difficulty listening.

Suggested Ground Rules

1. *Suspend assumptions.* Typically people take a position and defend it. Others take opposite positions. The result is polarization. In this assignment we would like to examine the assumptions underlying our direction and strategy before seeking to defend them.

2. *Encourage a spirit of inquiry.* We would like to explore the thinking behind the views of team members. Therefore, it is fair to ask others, "What leads you to say or believe this?" "What makes you ask about this?"

3. *Use a common language.* It is critical that we speak a common language and that team members communicate clearly with one another. Whenever possible, we will refrain from using the jargon of our respective disciplines.

4. *Consider expansive ideas.* Although we have a clear deadline and a product to produce, we will allocate time during the assignment for creative problem solving and expansive ideas.

Based on Peter Senge, *The Fifth Discipline*

Building trust and promoting respect among team members so that other views can be heard, appreciated, and absorbed must begin from the first encounters. It can be a tall order depending on the dynamics of the particular team. Here are two suggestions from WASH team leaders.

> *A team leader should welcome team members' ideas even when they differ from his or her own*. Let the team know that this is a place where a wide set of views is not only tolerated

"A lot of team leaders tend to say, `I've done this 10 times before and that is why I am team leader. What we are going to do this time is what I did the other 10 times.' Probably the best mission I ever led was one in which I was convinced, and maybe by virtue of that, I convinced everyone else that our way of operating was state-of-the-art. Nobody had ever done it like this before. If we did a bad job we were dead but if we did a good job, we were going to knock their socks off."
Jerry Silverman, Political Scientist, World Bank

but encouraged, particularly during the early stages of the assignment.

A team leader should explain what contribution he or she is expecting each member to make. The team leader's expectations of team members should be stated publicly and often. “We are going to rely on Susan to give us a cost analysis of what we are proposing. Based on that we will make some decisions”; or “I am counting on our health experts to help us better understand why the proposed approach to hygiene education isn't going to work”; or “We are going to wait until Bill can report back to us with the results of his technical assessment. We all need to understand what he has to tell us. Then we can review this information in light of our other findings so far.”

Practice 2. Identify the Interdisciplinary Aspects of the Assignment

During the TPM there are many opportunities to discuss taking an integrated approach to the assignment. These pre-departure discussions and agreements are critical because they set the stage for work in the field later. Particularly during the session on the scope of work (TPM, Session 4), team members need to grapple with defining and describing what an integrated product or outcome would look like and then deciding what roles they will play in order to accomplish it.

Develop a vision of an integrated product/outcome. First a team attempts to clarify the purpose of the assignment and the outcomes the client expects and the team seeks. This gives some shape and a broad direction to the assignment. One way to do this is by sorting through priorities. For example: Is it a priority to ensure that the project has a strong mechanism for fostering participation at the community level? Is it a priority for key stakeholders to agree on that mechanism before the team proposes it? Can this priority coexist with the priority for a highly visible well-drilling component? Is it possible to rank these priorities? All team members must be given an opportunity to express their views and bring up any issues they see as important.

In establishing the priorities, the team must fully understand what the tradeoffs are if one objective or approach is emphasized over another. Although the client usually dictates priorities, it is not unusual for a client to be influenced by the collective wisdom of a team. Within the scope of work there can be room for negotiation.

Tools & Techniques

Practice 2: Interdisciplinary Aspects of the Assignment

- *Team members review the scope of work & describe their vision of the final product. Then the whole team agrees on what the integrated product will look like.*
- *Team members individually describe their roles on the team by answering these questions:*
  - *What are the linkages between my work & that of _____(team member)?*
  - *How can we work together to address those linkages?*

The vision the team has for the assignment is often an evolving one, which may change as work progresses.

Establish roles and confirm their interdependence. As team members begin to sort through the role that each will play and what that means operationally, it is important to address linkages and interdependencies among them. All team members should come to understand specifically the contribution each will make to an integrated product and the responsibilities each will have to assume for the integration to occur.

One way to address this is to ask members to write down their current understanding of their role, and then to list what they see as their specific responsibilities or tasks and for each to state whether they are to be carried out individually, jointly, or by the entire team.

Practice 3. Plan for Integrative Work

A team may intend to work together, but unless it develops a plan and schedule that specifically allocate time for collaboration, intentions will not translate into action. This includes planning for the data-gathering phase of the assignment. To efficiently organize a plan and schedule for the assignment, the team leader should take the following actions.

Set early deadlines and establish the process for product completion. If the end product of a task is a written report of some kind (for example, an evaluation, a project design document, or a study), the team leader should set a realistic but early date for its completion. If the team waits until the last possible minute to put together the report, despite good intentions, no time will remain for integrating everyone's contributions and for giving one another feedback. Additionally, regardless of how clear any agreements may have been before the writing begins, actually seeing words written on paper has a powerful impact that may threaten the agreements. Also, as they write, team members may often think of new twists on an interpretation or gain a new insight, which may affect timing and previous agreements. The entire team must therefore agree on a process for completing the product and honor the deadline. (See Best Practice 9, page 41, for ideas on producing the final report.)

Develop an integrative plan for data gathering. Whether the assignment is to carry out a sector assessment, conduct an evaluation, develop a project design, or provide technical assistance to a project in need, some kind of data gathering is required. The kind of data-gathering strategy a team develops depends on the type of assignment and how important an activity data gathering is. The team should

Tools & Techniques

Practice 3: Integrative Work Planning

- *Team members list most critical categories of data & identify cross-cutting themes.*
- *Team develops an initial data-gathering protocol. Options to consider include:*
  - *A protocol for each type of respondent with questions from each discipline/team member.*
  - *A protocol for each discipline with cross-cutting/integrative questions.*
- *Discuss time line for the work that will accommodate:*
  - *time for all members to give feedback to each other;*
  - *the maximum amount of creativity & flexibility;*
  - *input from key stakeholders early enough to be useful; &*
  - *timely completion of the activity.*
- *Team members identify major tasks & schedule team working sessions around them. For example,*
  - *on-site start-up;*
  - *mid-data collection;*
  - *final data collection;*
  - *initial conclusion scoping;*
  - *key stakeholder input;*
  - *final conclusions & recommendations; &*
  - *report production.*

agree on a strategy that will increase team-wide ownership of all the data. A number of techniques can be used to begin planning for the data-gathering portion of the task.

Decide what data is needed. A good way to sort through data-gathering priorities is first to ask team members to make two lists: the information they think they can provide to the others and the information they and the team will need from the others. This will help the team members decide on the most important categories of data they will need to collect and will give them a sense of how their roles are interrelated. Since there is only a limited time available for data gathering, it is helpful to agree on the most critical information needed before the team begins to design its data-gathering protocol.

Identifying cross-cutting themes and from these, additional categories for data gathering will help the team later on as it attempts to develop a holistic view of the situation. Members can also begin to see the issues with which everyone on the team must be concerned. Some examples of cross-cutting themes are sustainability, training/staff development, institutional strengthening at all levels, community and local participation, economics and finance, and interagency coordination and collaboration.

Develop an interdisciplinary data-gathering protocol. The organization of the data-gathering protocol will flow from the team's overall data-gathering strategy. For example, the protocol could be organized according to the disciplines represented on the team. It could include a set of integrative questions representing cross-cutting themes such as sustainability and institutional strengthening. Alternatively, a protocol could be developed for each category of respondent—one for ministry officials, one for district-level engineers, one for village health committees—with questions from each of the team members.

Teams should develop a first draft of the data-gathering protocol together prior to departure so that it becomes a team product with which everyone is comfortable. One way to do this is to have each member write down the major information categories or areas of inquiry the team has decided upon and, for each of these, the key questions that need to be asked. The team should review these lists together so that team members can question one another and come to understand what is being asked and why. The team should then add any

"For a team to work effectively together, team members must have a clear understanding of what their priorities are with reference to their objectives. For example, there is a tradeoff between building the best possible irrigation system and getting people to work effectively together. As team leader it is my responsibility to help the team determine what the objective really is. Which objective will be optimized and which will be subordinated. Once a team gets that straight and everyone understands it, then they can work together to sort out how what they're doing impacts on that primary objective." **Jerry Silverman, Political Scientist, World Bank**

additional ideas and shape the final form of the protocol, including integrative questions on cross-cutting themes.

"Team members generated interview questions first from their own perspective and then from the team perspective. These questions were organized according to respondent. For example, questions for the growers, no matter which team member generated them, became part of the growers' questionnaire. Questions for the manager of the district went to that questionnaire. And so on. The whole team concurred on all the questionnaires." **David Levine, Management Development, Independent Consultant**

Schedule key working sessions and establish a common working space. A requirement of an interdisciplinary team is that it must set aside time to work together to hash out interdisciplinary issues, share information and insights, revise the strategy for getting the work done, formulate findings and conclusions, and generally interact with one another. Although most teams spend a significant amount of time together, the time can tend to be unfocused and somewhat ad hoc.

Without interfering with the spontaneity and natural rhythm of the team, team leaders should identify critical points in the work and schedule team sessions at those points. This is particularly important because in the field the pressure on a team can be intense and the expectations of what can be accomplished in a short period of time high. There is always another person to interview, another village to visit, another piece of data to unearth. Members therefore need to agree in advance to be available at certain times for key working sessions. For example, a team might agree to a plan like the one shown in the accompanying box.

Key Meetings

Time/Purpose	**Length**
Mid-point/data gathering • Describe emerging picture/issues • Identify gaps/adjust data gathering strategy	2 hrs
Final data gathering • Share and analyze the data • Identify findings • Share with the client	1/2 day
Conclusion scoping • Identify conclusions/recommendations • Share with the client	1/2 day
Report production • Adjust recommendations • Agree on final outline and procedures for report production	2 hrs

"My most successful technique as a team leader is very simple: to set and get consensus up front on a schedule in which the final product is finished a week early to allow for a lot of quality control and criticism both within the team first and then with the client. Last minute submission guarantees a less-than-optimal product. Team members often respond to such a schedule with open mouths: `Why in the world do we have to rush?' But I believe it is better to have the crunch a week or ten days earlier than the last three days. It's no harder. You still have the crunch, but you then have time to fix it." **Jerry Van Sant, Management and Organization Specialist, Research Triangle Institute**

Designating a place specifically for teamwork is also helpful. It will enhance the team's effectiveness, particularly for teams of more than three members. It helps to establish a sense of continuity and ongoing focus to be able to keep flipcharts with key information visible to all. In this way, all materials are kept in one place for easy access, and a

quiet place free of distractions is available for team meetings, interviews, meetings with counterparts, or individual work. Hotels will sometimes make such a space available at a nominal cost.

Entry and On-Site Start-Up Phase

During this initial phase of the fieldwork the team has at least three major tasks to accomplish. It must (1) take care of initial protocol requirements, (2) check expectations, strategy, and logistics with the client, and (3) when there are counterparts involved, build the expanded team. How a team carries out this phase of its work can influence first impressions and set the tone for the whole assignment.

Practice 4. Involve Key Stakeholders and Adjust Plan

One of the critical aspects of the entry stage is involving key stakeholders appropriately. On some assignments, contact with stakeholders may be limited to an initial negotiating session and then a presentation of findings and recommendations towards the end. For others, counterparts and other key stakeholders may be involved more fully in the work.

Involving stakeholders may take some planning and persistence because program managers, technical people, and other stakeholders are always busy. Many technical assistance teams and donor representatives passing through are demanding their attention. However, given what we know about creating conditions for ownership and sustainability, the benefits of involving stakeholders make it well worth the effort.

Negotiate/revise the vision of the integrated product and strategy. A useful way to involve stakeholders is to use the products developed at the TPM to brief them on the work the team has done so far. With a minimum amount of "packaging" the team can put together a document that covers the team's definition of the purpose and outcomes or product of the assignment, issues involved in completing the assignment, roles and responsibilities, data gathering protocol, and work plan.

Build the expanded interdisciplinary team. When counterparts are involved in the work—even counterparts who can only be involved part time—some time must be spent to bring them on board so that they are working with the team toward a common goal. One way to involve them is to run a mini version of the TPM after the initial negotiations with the client. The working sessions should schedule time for participants to discuss: expectations for working together, the

Tools & Techniques

Practice 4: Involve Key Stakeholders & Adjust Plan

- *Team uses material developed at the initial TPM to make a presentation to key stakeholders.*
- *Format of TPM is used for meeting with counterparts and other key stakeholders.*
- *Working sessions are structured to discuss*
  - *outcomes & products;*
  - *interdisciplinary approach;*
  - *data-gathering protocol; &*
  - *workplan.*

interdisciplinary approach, outcomes and products, the data gathering protocol, and the workplan.

Data Gathering Phase

The data gathering phase of the work is often the first real opportunity for the team to experiment with ways of working in an integrated fashion. Before beginning this phase the team needs to address a number of issues. For example, how much of the data should be quantitative versus qualitative? Is sampling required? How will cultural norms, time, and logistics influence data collection? What kinds of data collection methods should be used? While some of these questions will already have been discussed during the TPM in the predeparture phase, it is now in light of actual realities that final decisions need to be made. Three practices suggested by WASH team leaders will help this phase of the work go smoothly.

Practice 5. Use Integrative Mechanisms for Gathering Data

Regardless of what kind of data gathering mechanism is used to collect primary data—surveys, participant observations, or structured interviews—or how rigorous the data collection activity needs to be, interdisciplinary teams can find ways to develop an accurate and full picture of the situation they are trying to understand. The ability to do so is influenced by how a team goes about collecting the data it needs.

Review and refine the data gathering protocol. A first step is to review and refine the data gathering protocol based on information from early meetings with key stakeholders and counterparts. As the data gathering actually begins, another way to refine the protocol is to try it out. If the team conducts one or two interviews together, it can use the experience to adjust the protocol as well as the approach.

Agree on a data gathering strategy. Creativity is needed to come up with an effective plan given the realities of a small team, problems of spatial separation, limited time, logistical snags, communication, and other difficulties in gathering data in the developing world. Generally a pragmatic approach is best. Some options a team can consider for organizing itself are dividing up responsibility for collecting data; deciding through a process of negotiation that certain team members will collect information for one another or that team members will collect data in pairs (it can be useful to pair team members with different specialties or perspectives); and phasing the collection of data in a rational manner (for example, it may be logical to collect community-level data first).

Tools & Techniques

Practice 5: Integrative Mechanisms for Data Gathering

- *Team members use the data gathering protocol once & then refine it based on the first experience.*
- *In finalizing the data gathering protocol all options are considered, including:*
  - *Members collect data not only in their specialty area.*
  - *Team works together at local & then national levels.*
  - *Team members conduct interviews in pairs.*
- *Team members discuss & then decide on best strategy to promote team ownership of the data.*

A team should aim for the kind of strategy that will allow team members to learn more about what other members think is important and why, and generally to promote team ownership of all data. In addition, the strategy should increase the team's capacity to take in information, provide opportunities to test findings, and maximize the potential for developing shared conclusions.

Practice 6. Implement an Integrative Approach to Data Organization, Sharing, and Analysis

Teams can collect a lot of data but may find it difficult to use it all effectively. When teams suffer from "data overload" they may ignore data that has taken valuable time to collect or may subject the data to a superficial analysis. Implementing an integrative approach to data gathering requires organizing the data so that it is usable and accessible. Teams must also find a way to share what they are finding out so that hypotheses can be tested and plans made about what to do next.

Organize the data in such a way that it is usable. Organizing data to make it usable is particularly important for those assignments that involve substantial data gathering, such as an assessment or evaluation. While quantitative data is desirable whenever it exists, in most situations teams will have to rely on qualitative data to round out the picture. Baird (1992) describes raw qualitative data as having two basic characteristics—volume (even a few interviews can generate pages of notes,) and sequential organization (based on the data collection process, not on a logical sequence amenable to analysis). Information, insights, and recommendations are scattered throughout masses of paper.

As described by Tesch (1990), qualitative analysts are highly idiosyncratic in the procedures they use: "When we talk . . . about the analysis of qualitative data, we are not dealing with a monolithic concept like statistics. No one has `codified' the procedures for qualitative analysis, and it is not likely that anyone ever will. Qualitative researchers are quite adamant in their rejection of standardization. Whenever they describe their methods, they are eager to point out that this is just one way of doing it, which others should feel free to adopt as much as they see fit, and modify and embellish it according to their own needs and ideas. Thus, the notion of qualitative analysis is fluid and defies definition."

Tools & Techniques

Practice 6: Data Organization, Sharing, & Analysis

- *To make the data useful, team members clean it up, code it, & store it.*
- *At mid-data collection, team members summarize status of data collection, discuss preliminary findings, revise strategy as needed.*
- *At final data collection stage, team members summarize data on posted flip charts organized by category or key questions.*
- *To analyze the data, team members discuss these questions:*
  - *What is the data indicating?*
  - *Where are the linkages?*
  - *What assumptions are the data based on?*

"If data collection is carried out in an interdisciplinary fashion, the engineer on the team has to learn to think like the health person, the health person like the engineer. Then if the engineer cannot be present at all interviews from which she or he needs data, the health person can conduct the interview and vice versa. These are some of the processes involved in creating interdisciplinary work, as opposed to multidisciplinary work, where the engineers write their story from their perspective, the health persons write their story from their perspective, and the team leader tries for coherence by writing connectives."
David Levine, Management Development, Independent Consultant

Some tips that Baird shares are:

- *Clean up the data*. Discipline yourself to review your interview notes as soon as possible after the interview to correct errors and illegible segments and fill in missing information.

- *Code the data*. The most straightforward way to code the data is to do so using the key questions or areas of inquiry as summary categories.

- *Store the data*. The cut-up-and-put-into-folders approach involves copying the notes, cutting individual segments, and pasting them onto clean pages with all segments relating to a category placed in a file folder. The result is a set of file folders each containing all segments relating to one category.

Structure team meetings so that findings can be fully shared and debated. Consultant teams are notoriously stingy about budgeting time for analysis of the information they have collected, somehow assuming that the analysis will take care of itself and that it is possible to move directly from data collection to report writing with a minimum of team interaction.

"When the epidemiologist finally began to go with the anthropologist to ask questions of the women in the marketplace rather than doing his data gathering alone, the data began to click." **May Yacoob, Medical Anthropologist, WASH**

In fact, at least two meetings should be required during the data gathering phase of the assignment. The first should occur at about mid-point so that the team can summarize the status of the data collection, discuss preliminary findings, and revise the data gathering strategy as needed.

The second should occur when the data gathering is finished. This is somewhat of an arbitrary point dictated mostly by time constraints and the reality of having to get the job done under often less than ideal circumstances.

Data sharing meetings should be structured in such a fashion that the emerging picture can be described and analyzed. This involves at least two steps. The first is to display the data visually so that the team can look at it systematically. The most common way to display data is to summarize it in a matrix, a chart, a checklist, or a figure (a flow diagram, network, or systems diagram). The process can be as simple as clustering or grouping the data into categories and juxtaposing the categories so that the linkages and relationships among them are revealed.

The second step in structuring data sharing meetings effectively involves analyzing the data through discussion. At this point it

becomes important once more for team members to define terms and use common vocabulary. By suspending assumptions, the team can think out loud together and attempt to understand complex issues. Although the natural desire is to see the world in simple, obvious terms and to believe in simple, obvious solutions, most development problems are fairly complicated. Simplistic interventions may temporarily alleviate the problem, but in time they come back to haunt us. With discussion, team members engage in debate to justify hypotheses and arrive at preliminary conclusions. Through discussion, the team begins to make sense out of the results of the data collection and determine what the results mean in terms of action. An interdisciplinary group can progress from a simple to a complex analysis of interrelationships in a program much more quickly than an individual can.

At this point in the process of analyzing and debating the data, the team should present its findings to the client and program stakeholders, who can help the team to understand inconsistencies in the data and can point out faulty logic in the findings.

"When the teams came back from interviewing, we developed standardized forms in which they would put down their understanding of what they had learned. After each interview, the interviewing team debriefed, recorded, rewrote. Every three or four interviews, the entire team got together, updated its hypotheses, or they fell off the table because they were clearly unimportant based on new understandings. The concurrence of the whole team was necessary in this process. Even if 80 percent of the work is engineering and 20 percent is something else, those two perspectives are equally important. Majority vote doesn't work on an interdisciplinary team because majority means that some disciplines are irrelevant. If so, why were they represented on the team in the first place?" **David Levine, Management Development, Independent Consultant**

Practice 7: Maintain Team Commitment to Interdisciplinary Approaches

As the work progresses, a team leader can help by keeping an eye on how the team is working together. As the pressure builds and time grows shorter it is not always easy to maintain a commitment to interdisciplinary approaches. But there are ways to keep commitment alive; several are given below.

The team leader should use an active management style in continuing to monitor progress and manage for quality. In particular, he or she must keep an eye on the collective product of the team. Groups operate at their highest level when continuous attention is paid not only to accomplishing the work, but also to how the work is being accomplished. When conflicts or disagreements arise, they should not be looked upon as signs of failure. It is unusual for a high-performing team never to experience conflict. In fact, conflict should be viewed as proof that the team is really working, that members are willing to challenge each other. They care enough about the work they are doing to get deeply involved in productive conflict with one another.

A team leader cannot be afraid to assess how things are going and make adjustments when needed. Only by facing the reality of the situation can better strategies be developed. It usually doesn't work just to hope that things will turn out all right. A team leader must often take active steps to make sure they do, particularly if the team

has set high standards for the work it wants to accomplish. Some of these steps are outlined below.

Foster conditions for creative problem solving and innovation. The team leader must determine what each team needs in order to work at its highest level. The leader will be better equipped to do this as he or she learns more about the team's unique characteristics. The following techniques of enabling a team to perform at its peak work with most teams.

> *"The likelihood of two people listening to the same thing and emerging with either a full or the same understanding of what was said is virtually nil. So all of our interview teams consisted of two persons always from significantly different disciplines: an agronomist and an economist or an engineer and a sociologist, for example. And not only that, they were responsible for asking questions for every member on the team."* **David Levine, Management Development, Independent Consultant**

Encourage discussion. Discussion must allow for exploration of complex issues from many different points of view. Some teams seem to have a tendency to debate everything. Others are reluctant to raise issues they consider to be controversial for fear of "opening up a Pandora's box." A team may have members who are cautious in putting forward their own professional judgments because they do not feel safe in doing so. Some teams may have one or two members who do all the talking, making it difficult for other members to voice their opinions. Others, however, may find very little about which they disagree.

Make it easy to challenge others. People feel freer to speak their minds and challenge others if they think others will listen, if they think challenging another person about his or her ideas is acceptable, and if they sense that others will receive the challenge without taking offense. A team leader can encourage team members to listen to each other and help them overcome their defensiveness by reinforcing how important it is for these issues to be discussed. The team leader also should remind team members that if defensiveness surfaces it may be time to reestablish the team's spirit of inquiry.

Share points of view early. A team should engage in dialogue earlier rather than later in the assignment because doing so tends to open up thinking, elicit expansive ideas, and enable the team to grapple with complicated issues before getting too far into its work. Regardless of an interdisciplinary team's personality, lots of debate, discussion, and listening are essential to its success. There is a real danger in waiting until the end of an assignment to start this process. Interdisciplinary team members may be accustomed to debating colleagues from their own disciplines but not necessarily someone whose professional training is based on a foreign set of assumptions and viewpoints. It is easy for team members simply to give up

when trying to understand the point of view of someone who starts with a very different premise about development.

Team members also tend to feel less under attack if communication begins early and if ground rules for establishing a spirit of inquiry are followed. Therefore, it is essential that team members find effective ways to communicate with one another as soon as possible. To expedite this, one person might be designated as the "Stupid Question Asker" in an attempt to make the point that any question is a good question and that team members who may not understand other members' paradigms, assumptions, or technical jargon may be expected to ask a lot of questions.

"Even though we were going out to different parts of the country, we set it up so that we would have a lot of team meetings. We felt it was very important to share the information with the client as we were getting it. So some of the meetings were just team meetings, but we also had two round table sessions where we invited our clients. We didn't want any surprises, but, more importantly, we wanted the clients to learn as we were learning." **Steven Joyce, Management Development, Training Resources Group**

Require "straight talk" and a common vocabulary. Because of the continuous interaction that is essential in an interdisciplinary team, team members need a certain way of talking to each other, a common language. Most consultants have been in a meeting when an economist, engineer, or anthropologist was explaining some theory or idea in language that left the listeners feeling excluded and ignorant. Specialized language can be used as a way of keeping others at bay or to avoid having to explain a point fully.

In an interdisciplinary team, the language used must be understandable to all members. If even one member on the team is unclear about what is being said, that is one too many. This is also essential practice for how ideas must be communicated to the client. If a team member does not understand an idea or proposal, that is a good clue that the client may not either.

Make it a practice of stopping team members when they use an unfamiliar term and asking for a definition. These definitions can be posted on a flipchart and added to as the work progresses.

Set a clear purpose for meetings and manage their agendas. Teams spend an enormous amount of time in meetings. They are the primary vehicle for getting work done. Therefore it is essential that they be well managed and productive. There are various types of meetings, each with a specific purpose. For example, the "quick check-in" keeps everyone up-to-date on events and allows members to coordinate their activities to maximize efficiency. A problem-solving meeting addresses the team's strategy and approach—for example, how the team can organize itself to collect the best data, to deal with changed needs and priorities, or to decide how to proceed when key

stakeholders are unavailable to consult. Information sharing lets everyone understand the data being collected so that a realistic picture of the assignment can begin to emerge. When the purpose and agenda of a meeting are clear, it is easier for team members to help each other stay focused.

How the work gets done during the meeting is also important. A team may be clumsy at first when learning how to debate, disagree, and get points of view across, but it can improve with practice. A few guidelines, can help a team succeed in this endeavor:

- Going around the table and giving all team members three minutes each to make their points,
- Pointing out when people are not reflecting on their assumptions or inquiring about one another's thinking,
- Posting a couple of questions for discussion on a flipchart and giving all team members a moment to collect their thoughts so they can be fully attentive when someone is talking,
- Setting a time limit on discussing a particularly problematic issue, and
- Keeping a list of issues posted to refer to for resolution as the team moves forward.

Keep team members focused on how their work is interdependent. Under the pressure of time and the requirements of individual scopes of work, there is a tendency to focus more on individual contributions and less on the collective product. It is the team leader's job to get members to consider the connections among their various assignments and the impact that one proposal or recommendation may have on another aspect of the project/situation. Sometimes these connections can be made clearer by drawing a systems diagram. Ideally team members should be counted on to act in ways that complement one another's actions.

"It's not uncommon when the engineer is talking for the economist and health expert to nod off. The team leader should require team members to make their presentations understandable to other members. They need to push for this." **Eddy Perez, Engineer, WASH**

Constantly make choices about strategy and tasks. The team leader is faced constantly with making decisions and tradeoffs as the work progresses. He or she may have to decide whether it will be better for the team to collect data in teams of two or whether it should be done individually. Other similar questions may arise: Should we hold off analyzing the data for two more days to make a trip to a certain village that has an important water committee in operation? What will we gain/lose by going? How important is it for the A.I.D. project officer to be at our meeting to discuss our preliminary findings?

Should we postpone it until he or she can attend? In making these decisions the team leader can use the team's vision of its expected outcomes as a guide.

Out of a desire to achieve something of real worth for the client, teams often back themselves into a corner in ways that can jeopardize the interdisciplinary thrust of the final product. A team leader needs to watch out for the following traps:

> *Perfectionism:* Team members may find it difficult to give up the ideal or preferred way of doing a task. A member may feel it's highly risky to share a draft that has not been worked over with a "fine toothed comb." Some people may think they are not doing a competent job unless they have performed certain professional "rituals" deemed important by their colleagues. A team leader must be able to know when team members are operating in an appropriate way given the situation and when perfectionism is slowing things down, making the work more cumbersome or difficult, or masking the real work that needs to be done.
>
> Periodically checking in with individual team members to review progress and discuss the next steps can be helpful, particularly when members feel that the leader's purpose is to help everyone make the best contribution he or she can. Team members often need to hear that the team leader trusts them, that the work the team is trying to do is not easy, and that everyone needs to be in a constant problem-solving mode to find ways to make what they are doing relevant, feasible, and of the highest quality possible.
>
> *Agreeing to do more:* As the needs of the client begin to get clearer, opportunities arise to do more. Sometimes the client will ask for it directly: "Why couldn't you include an analysis of the Shire Highlands Project in your report? Your team will be visiting that same region anyway."
>
> Sometimes doing more is initiated by a team member who notices a need that he or she knows how to fix, or by one responding to a problem a counterpart is having. Doing more without negotiating extra time, however, is dangerous. Often team leaders are required to draw the line very clearly with a client, and expectations that were negotiated at the beginning of the assignment need to be renegotiated as the work progresses and the client discovers additional needs.

Tools & Techniques

Practice 7: Team Commitment to the Interdisciplinary Approach

- *To foster creative problem solving:*
  - *Encourage discussion.*
  - *Share points of view early.*
  - *Designate a stupid question asker.*
  - *Require straight talk.*
  - *Develop a common vocabulary.*
  - *Post a list of common definitions.*
  - *Make it easy to challenge others.*

- *Set a time limit on discussions to keep meetings effective. E.g., in three minutes, team members individually express their views on a complex or important topic. Their fellow members ask questions until they fully understand. Other techniques:*
  - *Post list of issues.*
  - *Constantly review ground rules & evaluate group processes.*

- *To keep team focused on the interdependence of their work:*
  - *Ask questions about linkages.*
  - *Concentrate on the whole, not the parts.*
  - *Use systems diagrams to show connections.*

- *Avoid these traps:*
  - *perfectionism,*
  - *confusing priorities,*
  - *ignoring deadlines, &*
  - *being talked into doing more than is in the scope of work.*

Confusing priorities: In complicated and stressful situations it is easy to lose sight of what the priorities are and end up spending time on less important tasks. The leader can help the team clarify its priorities, asking, for example, whether it is more important to spend time on producing a polished report or on preparing and holding a one-day workshop to present findings and develop recommendations. Although discussed and agreed to early on in the team's life, the priorities and expected outcomes need to be reviewed and sometimes renegotiated as the team better understands the situation.

Tools & Techniques

Practice 8: Findings, Conclusions, & Recommendations

- *While developing the findings, conclusions, & recommendations, team members agree*
  - *not to ignore information that conflicts with hypotheses,*
  - *not to attach too much importance to their individual perspectives,*
  - *not to make too many recommendations, &*
  - *not to use terms unless everyone understands them.*

- *Adapt the following steps to the situation:*
  - *Individual team members review their data & list major findings & information gaps.*
  - *Individual members present their data, & their fellow team members challenge, revise, & add ideas.*
  - *Team formulates an initial list of recommendations, preferably 10 or fewer.*
  - *Team & counterparts analyze each recommendation & agree on high, medium, or low feasibility.*

Data Analysis and Strategy Development Phase

The data analysis phase of the work requires intensive interaction between team members. It is the time when the best professional judgements of the team members are called forth and the team is most challenged to keep an interdisciplinary point of view. Teams are prone to treating this phase of the work superficially and allocating minimum time to it in favor of doing more data gathering or moving ahead to get the writing done. Here are some suggestions on how to manage this important phase.

Practice 8. Develop a Holistic and Integrated Set of Findings, Conclusions, and Recommendations

Just as it needs to set aside time to review its data, a team needs time to develop a consensus on its findings, conclusions, and recommendations. Active participation by all team members is crucial here. A team will be hampered if someone does not participate. As the deadline for completing the task draws near, the team spends time debating the pros and cons of various proposals. If team members have already had success in communicating different perspectives and in being heard and understood, this part of the work will be greatly facilitated.

Watch out for actions or tendencies that are antithetical to an interdisciplinary approach, such as the following:

- Ignoring information if it conflicts with already formed hypotheses,

- A team member's showing too much attachment to his or her own perspective,

- Miscommunicating due to a lack of a common definition of terms, and

- Developing a long, disorganized list of recommendations.

The leader should take steps to equalize responsibility among all team members and to involve the client and project stakeholder at this point in the team's progress.

Make all members equally responsible and involve key stakeholders. Setting the expectation that all team members are equally responsible for the team's results can help establish the norm that every team member must understand—at a general level, at least—and agree with all findings and recommendations. One way of organizing the team to achieve this is to ask each member to come to a working session prepared to present five key findings and five key recommendations for the team to work with.

At this stage of the work consensus is the only option for a high-performing, interdisciplinary team. Without it, the product that is developed is likely to be a loose collection of perspectives.

When the team is formulating its conclusions and recommendations it is more important than ever to involve the client and key stakeholders. A briefing is premature at this point, but a working session should be set up to review the proposed conclusions and recommendations before they have been put into their final form. While such a meeting takes time, it increases the likelihood that the recommendations will be implemented and gives the team members valuable insight into the feasibility of their proposals. During this meeting it should become clear where any major conflicts are likely to be and how various stakeholders see the proposed recommendations as fitting into their agendas. This session must be scheduled early enough in the assignment to allow time for the team to reconvene after the session and make whatever adjustments it needs to before writing its final report.

Fry (1992) sets forth a three-step process for a cholera assessment team to move from data analysis to the formulation of recommendations. These are described in the text box on page 42.

Report Production Phase

Practice 9. Create an Integrative Process for Producing the Final Report.

This phase occurs in many but not all assignments. For some, a major report is not the main product that is produced. For example, the brief summary report of a workshop is not the main product of the assignment; the workshop itself is. But in evaluations and assessments, the report *is* the main product. It is to teams involved in these assignments that this next practice is addressed.

Moving from Analyzing Data to Formulating Recommendations

Step One: Individual Team Members

The purpose of this first exercise is for each team member to clarify and analyze his or her findings and information gaps relative to his or her assessment topics. Each team member should carefully review all the data and draw up a list of major findings and information gaps that need to be addressed before decision-makers can take action.

Step Two: The Assessment Team

The purpose of this group exercise is to produce an initial set of recommended actions based on the analysis of the data collected. In a team meeting facilitated by the team leader, each member presents his or her major findings. The other team members should have an opportunity to clarify, question, and add to one another's findings. The team should then produce an initial list of recommended actions. These will be the basis for discussion and negotiation with government counterparts.

Step Three: The Assessment Team and<R>Government Counterparts

The purpose of this meeting is to analyze actions proposed by the assessment team according to feasibility and anticipated effectiveness, and to determine the final list of recommendations. The assessment team presents to its government counterparts, its list of proposed actions, along with an explanation of how they were produced. The government counterparts should have the opportunity to ask the team questions and to propose additional actions based on the assessment.

The team and counterparts then analyze each proposed action to determine the relative feasibility of each: What financial, technical, and human resources are required to undertake the action under consideration, and what resources are available? The group should agree on a high-, medium-, or low-feasibility ranking for each action. The advantages of finalizing the recommendations with government counterparts are that their participation will enhance the likelihood that the recommendations will be in tune with government policy and priorities and will be carried out.

Tools & Techniques

Practice 9: Final Report

- *Before writing the report, team members review the purpose of the assignment & update & flesh out the outline.*
- *Team members all read a piece of writing that provides an example of the report they are to produce.*
- *Team members write first draft quickly & then get feedback from fellow team members.*
- *Team members exchange drafts while there is still time enough for a thorough review & revision.*

"Team members need to practice persuading others that what they are talking about has relevance. This is not an easy job, for it is difficult to understand a point of view that is very different from your own. Also, it's very hard for someone to be impartial about something they love." **Helga Rippen, Engineer and Biologist, Independent Consultant**

Giving thought to how a final report or other written product will actually be produced can make a difference in its quality and in the degree of team ownership. While team members may feel more comfortable if some writing begins earlier in the assignment, the serious work of creating a well-integrated product can begin only after the team has agreed on findings, conclusions, and recommendations.

Too frequently a team begins to write without considering the most effective and efficient way of doing so. This can result in team members “spinning their wheels,” writing too much or too little, duplicating the work of another team member, and generally making the job of the team leader as final editor far more difficult than it needs to be. Creating a process for writing as a team can be quite challenging.

To maximize the team members' contributions to writing the final report, the writing task should be organized and a final outline agreed on before substantial writing has taken place. The following are some suggestions from team leaders with experience in this process.

Review the purpose of the assignment. Given what the team knows now, are there any changes in how it views the final product, who the key users are likely to be, and what would be most useful to them?

Consider how the report can be tailored for its intended audience. Does the audience have any special needs? How will they use the document? What special features can be added to make the document more useful. For example, will the report be more useful if the financial tables are in the text or in an appendix? What terms might need explanation?

Revise and update the outline. The outline must be understood and agreed to by everyone before writing begins.

Develop a method of writing. For example, ask each member to write a first draft very quickly, getting only the “bare bones” thoughts down on paper. Ask each member to allocate no more than eight hours to produce this first draft. Then have them exchange drafts and get input from others. Set a limit for the number of pages each section of the report should have.

Set early deadlines for drafts. A team member can get useful feedback from others only if he or she stops writing soon enough to allow others to consider thoughtfully what has been written. If this happens at the last moment, there will be no time for a thorough review, and the team member who is receiving the feedback will be

far less open to incorporating the ideas of others if he or she is just hours away from getting on a plane.

Debriefing/Closure Phase

The final phase of the technical assistance work takes place both on site and back at WASH headquarters where it is customary for teams to hold a debriefing on the results of its work. This phase is particularly important for those teams that have made an effort to use interdisciplinary practices. It provides a continual learning mechanism that allows our understanding of how best to work with interdisciplinary teams to grow. This is an opportunity to add to the list of best practices and to share them with each other.

Tools & Techniques

Practice 10: Debriefing

- *Team members discuss what they learned about interdisciplinary teams that can be passed on to others.*
- *Plan & implement a debriefing with key stakeholders on site & at headquarters. Make certain to invite key stakeholders in advance.*

Practice 10. Share Results and Interdisciplinary Lessons Learned

The work of the team is not completed until final sessions have been held with stakeholders and products have been delivered. There are two tasks for the team at this point. The first is to discuss within the team how things went and what was learned about interdisciplinary teamwork. The second is to plan and hold two de-briefings—one before departing with local stakeholders and the second at headquarters.

Debrief as a team. While a good practice for any interdisciplinary team is to be "reflective in action" it is also useful to take time out at the end of the assignment to talk together about the successes and difficulties of practicing interdisciplinarity. Three simple questions can get the discussion started:

- What interdisciplinary practices worked well for us?
- What can we do to keep improving?
- What did we learn about interdisciplinary teamwork that is worth sharing with others?

"As time moves on, a team becomes more and more used to working in a structured way—getting ideas up on a flipchart and critiquing them. For example, if it's an evaluation we are working on, we have to agree on the major findings and recommendations. This needs to happen well before anybody is writing so that we're all writing to the same general concept of the product. I think this makes the writing more efficient than if people work independently and then someone has to make it fit later on. Often the result is a report in which the chapters don't fit and it's quite clear that person A wrote this chapter and person B wrote that chapter." **Jerry Van Sant, Management and Organization Specialist, Research Triangle Institute**

Plan and implement a debriefing with key stakeholders onsite and at headquarters. The responsibility of professionals is to keep advancing the state of the art in their own disciplines, but, regardless of what discipline they represent, they should also make the practice of interdisciplinarity a part of their professional concern. Therefore, during its presentation on lessons learned, the team should share what it learned about doing interdisciplinary teamwork with WASH managers. Much is still to be learned about making interdisciplinary teams work. By focusing on what works, development workers can

continue to build both theory and practice and make a significant contribution to the delivery of short term technical assistance.

Appendix A: Persons Interviewed

The WASH Project

John Chudy
Craig Hafner
Eddy Perez
Phil Roark
Fred Rosensweig
Ellis Turner
May Yacoob

The World Bank

Andrea Silverman
Jerry Silverman

Training Resources Group

Dan Edwards
Steven Joyce

Research Triangle Institute

Tom Cook
Bob Hollister
Alan Johnston
Jim Kocher
Jim McCullough
Jerry Van Sant
Alan Wyatt

ISPAN (Irrigation Support Project for Asia and the Near East)

Bob Thomas

The International Science and Technology Institute

Bob Pratt

Independent Consultants

Sarah Fry
David Levine
Paula Roark
Helga Rippin

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Appendix C: Members of the Advisory Committee

Diane Bendahmane, WASH

Craig Hafner, WASH

Peggy Meites, ISTI

Fred Rosensweig, WASH

May Yacoob, WASH