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Participatory action research to improve health problem-solving practice at the district level in Krok Phra district, Nakhon Sawan, Thailand

King, Stephen Wheeler, Dr.P.H.

University of Hawaii, 1992

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PARTICIPATORY ACTION RESEARCH TO IMPROVE HEALTH PROBLEM SOLVING PRACTICE AT THE DISTRICT LEVEL IN KROK PHRA DISTRICT, NAKHON SAWAN, THAILAND

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAI'I IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PUBLIC HEALTH

DECEMBER 1992

By

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ABSTRACT

The Thai Ministry of Public Health identified community-based health problem solving at the District level as part of the Primary Health Care program that required improvement. The Thai PHC program has been integrated into a broad rural socioeconomic development program, the Quality of Life Improvement Program, that was expected to increase community involvement, enhance their learning and empowerment, facilitate the management of development with equity. In light of these expectations as well as the general professional recognition of the need to devise new approaches and strategies to achieve such aims, this study was undertaken with a general purpose to explore the potential of Soft Systems Methodology (SSM) as an alternative to short-term, professionally-controlled, task-oriented research.

The research aimed to study how SSM could be adapted to this context, how the methodology and techniques could be transferred in a normal working context, and what broader implications for practice these findings had. The research was undertaken as an exploratory case study involving a District Health Center, two Sub-district Health Centers, and four villages. The study was conducted with research associates from a regional PHC training and research center who, following guidelines provided, applied the methodology with local public health officials and community leaders.

The results of this experience demonstrated that the adaptation of SSM was not problematic as far as one cycle of the process could demonstrate. It was felt that the constraints on the adaptation and adoption of the techniques was primarily due to the technology transfer process. This was itself constrained by a number of factors. Most important were the lack of control by the research associates over the transfer process because of the deficiency of material in Thai language, the difficulty of

assimilating an open, participatory methodology, and the language barrier between the consultant and the research associates. There are plans for a necessary continuation and expansion the current project to make use of the learning gained and to improve the development of the methodology and techniques in this context.

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ABBREVIATIONS

BMN	Basic Minimum Needs
CPHCC	Community Primary Health Care Center
DHC	District Health Center
DHO	District Health Officer
DHW	District Health Worker
DO	District Officer (Ministry of Interior)
HFA	Health for All
HH	Household
MoAC	Ministry of Agriculture and Cooperatives
MoE	Ministry of Education
MoI	Ministry of Interior
MoPH	Ministry of Public Health
MU	Mahidol University
NESDB	National Economic and Social Development Board
OPHC	Office of Primary Health Care
PAR	Participatory Action Research
PCMO	Provincial Chief Medical Office/Officer
PHC	Primary Health Care
QoL	Quality of Life
QoL/BMN	Quality of Life through Basic Minimum Needs Program
RTG	Royal Thai Government
SSM	Soft Systems Methodology
TC	*Tambol* Council
TCDV	Technical Cooperation among Developing Villages
TCSC	*Tambol* Council Supporting Committee
THC	*Tambol* Health Center
THW	*Tambol* Health Worker

UNICEF	United Nations Children Fund
VC	Village Committee
VHC	Village Health Communicator
VHV	Village Health Volunteer
WHO	World Health Organization

CHAPTER 1:

PURPOSE, PROBLEM AND APPROACH

Put down your best half truth and call it a lie, but let it stand all the same. ..It will survive when your qualifications have been forgotten, even by yourself.

Iris Murdoch, ***Under the Net***

INTRODUCTION

In community-based development programs, where an external agency such as a Ministry aims to cooperatively improve the well-being of the population, there have been persistent difficulties in achieving and/or sustaining expected impacts. Such development programs may be viewed as the means to solve problems that are the gaps between an existing situation and whatever is considered to be the desired outcomes. The reasons for such deficiencies in problem solving are myriad as well as complexly interrelated and variable between places and across time according to descriptive and analytical studies which identify possible constraints on development programs. There are, however, some consistent themes that can be drawn from reviews of development programs to provide a useful basis for considering how to improve the effectiveness of such programs. Korten (1980, 1981) suggested that successful programs can not be characterized in terms of their content but rather in terms of their processes for achieving a fit between the program and the context in which it operates. Bryant and White (1982) similarly described the need for development programs to be managed such that they have the capacity to respond to contextual factors. White later elaborated this theme to suggest that the management of development programs needs to adopt approaches which can creatively respond to the particularities of a situation, especially in order to be sustainable (White, 1987). A comparable perspective was adopted by Chambers

(1983) when he described the problems of rural development as resulting from various gaps between the analysis and action (theory and practice) components of development programs. While each individual analysis of collaborative development programs was quite specific, there were themes in common in their perspectives on the approaches implementing agencies need to adopt to improve their effectiveness and sustainability.

There was agreement on three main points. First, development program difficulties were viewed as problems where these was some lack of fit within the program approach and/or between the program and the place of its implementation. The individual foci addressed particular aspects of conceptual approach, program design, or managerial practice but all referred to inappropriate assumptions or lack of logical consistencies in development programs that can be generalized as lack of fit. Second, there was a common reference to the need for learning in response to contextual factors as a means for creating fit. In all cases this was an interactive learning process which linked the program, the people involved, and the environmental context. Third, the learning could all be generally described as problem solving processes whereby the lack of fit was regarded as gaps between real and ideal, of theory and practice, or of program and place. The learning processes described were efforts to reduce such gaps. Cooperative community based development programs that may be scientifically sound, politically acceptable, adequately supported with resources and yet fall short of expectations were thus viewed generally as lacking fit. The improvement of fit was considered to depend upon learning through a problem-solving process in response to the context in which a program is applied.

The Primary Health Care (PHC) approach can be seen as a major effort to improve the overall fit of health development programs to the health needs of populations. Barton (1979) described this as a paradigmatic shift to a Political

Health Era involving: a change in focus from community to polity, a shift in professional education from clinical and community-based training to social-experience learning, a shift in research from community measurements of development to the measurement of more subjective socioeconomic indices of quality of life, and a shift in behavioral sciences to include economic and political sciences (especially in intersectoral efforts). An approach, however, consists of philosophical, methodological and technical components[1] and such a paradigmatic shift must also create fit among these components. Barton's prescription for changes was written at the time of the promulgation of PHC and the issue of whether or not this approach has enabled an achievement of better fit in health development programs can now be considered from the perspective of over a decade of experience.

While there has been progress in achieving the goals of PHC, a review undertaken by WHO in 1988 outlined some of the critical problem areas which still impede the operationalization of programs for health development (WHO, 1988). These impediments were divided in the review into two main types. The first were described essentially in terms of impact on levels of health and were considered to be those for which solutions were already understood. These were problems that are best indicated by unacceptably high levels of maternal and child morbidity and mortality and were regarded as the being the outcomes of the effects of a cluster of well-known causal factors such as social-environmental problems and ineffective health services. The second type were those that could be analyzed as:

> a paradigm of development-gone-wrong, where the current rules for dealing with health problems no longer fully apply, the disciplines so carefully built by the health sector are not adequate to define the problems, the problems have different kinds of complexity. Here, we see evidence of health standing on too narrow a base of both concept and practice. (WHO, 1988, p. 34)

---

[1]Philosophy' refers to the target of intervention, the 'what' and 'why' of a program; 'methodology' refers to the approach adopted, the overall design of the intervention (a combination of a more specific 'what' and generally 'how'); while "technique' refers to the specifics of 'how' the intervention is undertaken (Checkland, 1981).

These problems were described as involving factors that were not familiar to those in the health sector, those that crossed traditional disciplinary boundaries and added to the complexity of the problem situations being addressed. What is significant about these problems is the admitted inability of current health paradigms to define them, the lack of fit. While there was a call to face the challenge of the familiar problems, those that can be comfortably defined within the current PHC paradigm, there is a realization that there is an even greater challenge to the paradigm itself. Moreover, the call to face these challenges referred to essentially the same issues of fit as those described above.and to essentially the same types of strategies that, overall, entail a learning process to improve fit. These recommendations for action were extremely comprehensive in terms of the philosophies, methodologies and techniques of health development programs as well as in terms of the subject areas that required attention.

PURPOSE

This research was intended to explore a particular area of PHC operationalization that involved these challenges to identify possible means for improving the fit of health development programs. Beginning with areas in which I had developed an interest based on my past experiences working in Thailand, I focussed on two related problem areas that were also identified in the WHO (1988a) report: community participation in health development and manpower development in relation to health development needs. Specifically, in light of the issue of fit, this was intended to contribute to possible improvements in public health practice. Again, based on my areas of interest and experience, I approached these in terms of two related program-improvement strategies concerning the application of science and technology: research and education. These areas were identified as critical areas for development in the WHO report and the reviews of rural development cited above. They specifically address the issue of learning as a

fundamental requirement for improving fit within the components of health development programs as well as between the programs and the locations of their application.

The focus of the study was community health development problem solving which was identified by the Thai Ministry of Public Health (MoPH) as an area within the national PHC program that required improvement. There was an expectation that research could usefully contribute by suggesting how to improve the existing model which includes PHC as part of a broad rural socioeconomic development approach. I considered this research issue to be especially significant because it called for an improvement in fit in what is a critical component of the PHC program. It also enabled a consideration of learning through problem solving which was identified as a principal need if rural development programs are to be improved. Therefore, the implications of research in this area could be far reaching if it indicated what changes might be necessary to address the challenges of PHC, especially those that were outside of the too-narrow of the health sector's paradigm.

PROBLEM SITUATION

The research was intended to address a problem which arose from the operationalization of PHC in Thailand and which would involve issues of community involvement and health manpower development. The identified problem came from the Ministry of Public Health's 1990-91 PHC development program which called for;

> Support for self-managed PHC at the district level in order to develop an appropriate model for solving health problems in the region according to the priorities of [the] local situation and that indicated by BMN indicators—A Community-based project for problem-solving to support district PHC planning. (MoPH, 1989, p. 3)

There were neither explicit assumptions about the specific causes of the problem situation nor indications about the type of support expected as an outcome beyond the indication that it should contribute to the development of an appropriate model.[2] Community problem solving using BMN indicators was a reference to the Quality of Life Improvement through Basic Minimum Needs Program (QoL/BMN) which is the main vehicle for rural socioeconomic development including PHC. Therefore, the problem situation, as expressed by the central Ministry, was considered to be a need for improvement of the structures and processes for community-based health problem-solving process as designed under the QoL/BMN program. The expected process is described below.

Primary Health Care in QoL/BMN

The Thai Ministry of Public Health (MoPH) has had a history of health development activities since the mid-1950s that has demonstrated a progressive research and development in health care services following principles and elements that are now recognized as those of the PHC approach. It is, therefore, not surprising that Thailand was identified as one of the nations that demonstrated advanced implementation of PHC since its official adoption in 1979 (WHO, 1988). It is also not surprising that, within just two years of this formal promulgation of PHC, the Royal Thai Government (RTG) initiated a rural development program which integrated health into a broad socioeconomic approach; arguably making a further paradigm shift beyond health-centered PHC. Such accolades must, however, be qualified. While the WHO reports tend to refer to policies adopted, internal evaluations of Health For All (HFA) strategies by the MoPH (MoPH, 1991) tend to be more frank

[2]The document (MoPH, 1989) outlined various support activities under the WHO-supported biennial program including seminars, training, research, and model development. It specified the objective, type of project, responsible institution, and budget only. Individuals or groups from the responsible institutions submit proposals, which may include additional collaborating individuals and institutions, for consideration by the responsible committee of the Ministry.

about the constraints on their implementation. One such constraint, noted by Rigg (1991) in reference to QoL/BMN, was that such innovative policies are often the work of minority groups whose influence may wax and wane and whose efforts are frequently attenuated both by political-interest groups at the central level as well as by the bureaucratic conservatism at all levels. Furthermore, while WHO is now recognizing that a health-centered approach results in "development-gone-wrong" (WHO, 1988), the reality has always been there. Therefore, the following account of PHC in Thailand is described as it has evolved and then incorporated into the QoL/BMN program (Judd, 1988; MoPH, 1988, 1990; Nadda et al., 1990). The subsequent description of the health problem-solving process is presented as an "ideal" to serve as the basis for further analysis of relevant themes and justification of the research undertaken.

Since 1961, national development by the RTG has been undertaken through five-year plans prepared by the National Economic and Social Development Board (NESDB)[3]. Sectoral plans are formulated by each Ministry in collaboration with the NESDB according to the overall targets, guidelines, and budgets. The progression of health development plans can be usefully described in terms of the first three development plans as a whole, and then for the remaining three in which PHC was formally included. The first three plans (1961-76) were essentially aimed at infrastructure expansion, increasing the supply and training of personnel, disease-specific control campaigns, and curative services. Resources, however, were concentrated in urban areas with a result that the majority of the rural population resorted to self-treatment; there was little acceptance of promotive or preventive services, and curative services were perceived as last resorts in cases of serious illness. In the latter part of this period, in response to an awareness of this

[3]The first plan (1961-66) actually covered six years as it was made up of two three-year sub-plans. Subsequent plans covered years as follows: Second, 1967-71; Third, 1972-76; Fourth, 1977-81; Fifth, 1982-86; Sixth, 1987-91. The Thai fiscal year begins on October 1st of the preceding year, hence, the Seventh National Development Plan (1992-96) began on 1 October 1991.

imbalance and inappropriateness, the Ministry structure was reorganized to integrate preventive, promotive, curative and rehabilitative services and to decentralize authority to the Provincial level. Further significant steps were taken to reformulate the Ministry's planning process through WHO-sponsored Project System Analysis and Country Health Programing during 1972-75 in preparation for the next, fourth national health development plan. It was also a period of numerous pilot projects using community-based, and community health volunteer strategies which, although having qualified success, provided an important lesson that, "The community cannot develop simply by learning better technology. It must somehow be organized in order to manage the technology in an effective manner" (MoPH, 1988, p. 18). Evaluations of the development efforts of this period agree that, while economic growth was outstanding, the distribution of benefits were not

The fourth and fifth national health development plans (1977-86) entailed a series of major shifts in health development planning which resulted from the achievement of a "critical mass" of leadership, not only within the MoPH, but also in other ministries, the NESDB, universities, and Non-government Organizations (NGOs). Aside from the formal adoption of PHC as a principal approach for health development, a number of other major projects focussed on integrated rural social and economic development. Noteworthy among these were: the Social Development Program, which focussed on basic needs, management and income generation; the Rural Village Self-managed PHC Project, which introduced an inter-village training and technology transfer technique;[4] and the Rural Poverty Eradication Project, which funded labor-intensive local development projects during the dry season when agricultural workers often migrate in search of temporary work.

[4]Technical Cooperation among Developing Villages (TCDV) where villages demonstrating good development capacities are used as training and demonstration sites for successive satellite villages to transfer knowledge and technology through "local experts" (Chical & Amorn, 1988).

A series of complimentary strategies—health manpower development, decentralizing organizational structures, increasing community capacities, and coordinating planning and management—led to a two-year campaign for Quality of Life Improvement through Basic Minimum Needs at the end of the fifth development plan and the adoption of QoL/BMN as the foundation for rural socio-economic development under the sixth national development plan (1987-91). This program was based on: a shift from purely economic to socioeconomic concept of development, intersectoral cooperation among development ministries, decentralization of authority, and community participation. Constraints, however, have been experienced in the operationalization of this program. Several authors have noted that the long-standing centralized, vertical, paternalistic bureaucracy has been resistant to change (Amorn, 1988; MoPH, 1988; Rigg, 1991). Other constraints include: the lack of community organization, leadership, and managerial skills; the lack, among government officers, of understanding and/or acceptance, intersectoral cooperation, and managerial skills; the lack of appropriate information, and poverty (Akin et al., 1986; Amorn, 1988; MoPH, 1988; Nadda, 1989; Thavisak, 1987; Ulit, Amorn, & Chical, 1989). A recent MoPH evaluation found similar constraints in the operationalization of PHC strategies (MoPH, 1991).

The PHC approach, when ratified at the Alma Ata conference in 1978, had, for the most part, already been adopted in Thailand. The limitations of its health-centered philosophy, what has recently been referred to as a paradigm of development-gone-wrong (WHO, 1988), quickly became apparent after the formal adoption of PHC in Thailand and led to the adoption of a more holistic approach, QoL/BMN. When, following the recommendations of WHO, an attempt was made to convene a meeting to foster central ministry-level cooperation among development ministries in support of PHC, the few representatives who attended were of junior

rank.[5] The implicit message was that "health" was a matter for the MoPH. This failure and the concurrent interest in the Basic Needs approach supported the strategy to adopt quality of life as a goal for national socioeconomic development under the aegis of the NESDB. It should be noted, however, that PHC has continued to be the main approach for sectoral planning within the MoPH and certain health care activities are undertaken according to needs determined by the Ministry in addition to those included in the BMN. In the following section, the process for community health problem solving as part of the QoL/BMN program is described.

Health Problem Solving in QoL/BMN

At the community level, PHC has been integrated as part of the broader QoL/BMN approach and, therefore, community health problem solving is essentially that which is based on satisfying Basic Minimum Needs (BMN). The QoL/BMN program was developed through a pilot study in Nakhonratchasima Province (1981-85) and then adopted nationwide under the sixth national development plan. The following description of the rural development administration, and the BMN the structural and procedural components, including the list of BMN elements and indicators, is drawn from the accounts of Amorn (1988), Amorn and Prapont (1987), Damrong and Pisamai (1986), and MoPH (1988).

Health development in Thailand is undertaken under the Ministry through a three-tiered administrative structure that includes provincial (*jangwat*), district (*amphoe*) and sub-district (*Tambol*) levels[6]. Community services are provided primarily by the *Tambol* level through a Tambol Health Center (THC). Policy is

---

[5]Amorn Nondasuta & Krasae Chanawongse (personal communication, September 1987).

[6]It is common practice to use the Thai term for sub-district (*Tambol*) in written English material in Thailand and this practice is followed here.

determined at the central level and enacted in a primarily top-down manner through this administrative structure. There are some degrees of freedom at each level within the policy outlines to respond to local conditions. At the peripheral level, the main decision-making function is undertaken by the District Health Office (DHO) which supervises and supports the community health services provided by the THCs. At the community level, there is a Village Committee (VC), including an elected headman and approximately seven to eight members, which serves to administer community affairs including health. In addition, there are two types of volunteer Village Health Workers (VHWs) Village Health Volunteers (VHVs) and Village Health Communicators (VHCs) who support THC activities in the community. At the *Tambol* level, the *Tambol* Council, which is comprised of village headmen and usually one other member of the VC, serve to plan and administer development activities for the area with assistance from the Tambol Council Supporting Committee (TCSC). The TCSC is made up of *Tambol*-level government officers from the four main development ministries: Agriculture and Cooperatives, Education, Interior, and Public Health. The *Tambol* Council is the main interface between government and the community in planning and implementing rural development activities through five-year plans.

The expected model for rural development problem solving under the QoL/BMN program can be described as a classic problem-solving process involving the comparison of existing levels of village quality of life development with a predetermined standard ideal in order to identify gaps for solving. The ideals for villages development—the Basic Minimum Needs (BMN)— consist of eight elements which are measured by thirty-two indicators established by the four central ministries (see Appendix A). Each year, the levels of quality of life (QoL) achieved by each village is determined by measuring the BMN indicators. During the dry season (January to June) surveys are conducted to measure these indicators. The first step is a household survey using a standard survey, BMN Form 1, which includes a number

of questions with guidelines that is used to determine household achievements. The survey should be conducted by members of the VC interviewing each head of the household or making observations. Household data along with data obtained from the records of the Village Committee and government facilities such as the THC and the schools are compiled into a village summary form, BMN Form 2, by the VC with assistance from members of the TCSC. The final form, BMN Form 3, provides the target achievement levels under current policy and is used to calculate the extent to which the village has achieved those levels. Examples of the contents of each form for BMN indicators Number 5 (Household cleanliness) and Number 6 (sanitary latrine) are provided in Appendix B.

Unmet BMN are identified as village problems and it is expected that the Village Committee together with the members of the TCSC analyze the problems and determine appropriate solutions. These solutions are then categorized according to whether they: (1) can be solved by the villagers without external assistance, (2) can be be solved by the villagers with some assistance from the government, or (3) whether they can be solved only by the government. In the first case, the VC is expected to prioritize the problems, and to plan and implement a project to solve the problem. In the latter two cases, the problems are referred to the TC for planning and requesting resources from the government. These requests are forwarded under the *Tambol* five-year plan through the District Office to the provincial level for consideration. The BMN data are also aggregated at the national level as a means for evaluating quality of life development nationwide and for prioritizing the allocation of resources to the provincial level.

There are specific expected outcomes of this problem-solving process beyond the outcomes measured by the BMN, especially from the health sector in terms of PHC development. The approach as a whole was purposefully chosen to enhance sociopolitical development of both government services and the people with a

primary aim of increasing the self-reliant and self-managed participation of the community in their own development In the health sector this resulted from a conscious choice to pursue a policy of social participation rather than one of continued strengthening of basic service. Amorn summarized the philosophy of this approach as:

> Problem solving requires new points of delivery and expansion over and above those provided by hospitals and health centres. The new work distribution points must fit the context of the community system and be implemented by the community itself. A health service system must be built-up which will be under the responsibility of the community with the necessary cooperation and support of the community. The implementation of this health system will receive necessary technical and budget supports from the government. (1988, p. 15).

Thus, community involvement — based on self-recognition of problems, participation in planning and implementation of improvements, and the provision of support — is considered to be an essential part of the problem-solving process; one that should be flexible in response to social conditions and the problems being encountered by specific communities. Moreover, it is expected that this problem-solving process would lead to increased control by the community. According to the then Permanent Secretary of Public Health, Dr. Amorn Nondasuta, the process would ultimately be adopted by the community as their own to the extent that they would be able to describe their own indicators of needs as they they saw fit and as those needs changed[7].

The Ministry's PHC development program called for research which would contribute to an improvement of the community-based problem solving process using BMN indicators at the District level. There were no indications of what aspect the the situation were considered problematic or what what factors were thought to be significant. The reviews of the constraints on rural development in general and PHC development in particular suggest that such problems involve both factors

[7]Amorn Nondasuta (personal communication, December 1989).

intrinsic to a particular situation as well as factors that result from the limitations of the development paradigm adopted. It can be expected, therefore, that problems such as this that include a broad range of development areas and that involve various groups of participants from both the government sector and the community are very complex, or "messy". The approach to the study of such a problem with an intention to inform on how health development practice may be improved needs to be considered with an appreciation of these characteristics of the problem situation and these expectations for the outcomes.

STUDY APPROACH

In order to study the complex situation of health development problem solving with the aim of suggesting possible strategies for its improvement, this study was designed as an exploratory case study using participatory action research. The specific methodology applied, which incorporates all of these design features, was Soft Systems Methodology. Soft Systems Methodology (SSM) was developed as a means of making improvements in complex problem situations through the application of systems thinking. SSM was developed by Checkland (1981) in response to the failure of basic science and operations research methodologies to deal with the complexity, the history, and the variable perspectives found in complex problem situations such as those described in PHC development in general and in the specific research problem being addressed in this study. The following brief introduction is drawn from Checkland (1981), Naughton (1984) and Wilson and Morren (1990).[8]

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[8]This research was undertaken based on Checkland's 1981 book. After the completion of the study, it was found that Checkland had in the meanwhile published a second major account of SSM which included some major developments of the practice of SSM (Checkland & Scholes, 1990). This new material was not available at the time of the study and so was not included in the conceptual framework or design of the research. However, they do offer some important insights into the broader issues of the methodology and these will be considered briefly in the final chapter.

A main feature of SSM as a methodology is that there is no assumption that it is possible to find certainty or agreement about the definition of the problem among those who are involved in a problem situation. Second, it is therefore unlikely that a specific solution can be identified for such a problem. Other than these crucial distinctions, the methodology approximates a problem-solving process where there is a reiterative effort to improve the situation through cooperative research and action. In gathering information about the situation, emphasis is placed on capturing a rich account with particular attention on how people involved view the situation, what they see as the main tasks and significant issues and the directions they would like to see possible improvements take. This description of the situation is a multi-perspective, elaborate account which is consciously not controlled by the analysts as is the case in basic science research.

In the next phase of the process systems thinking is applied. This is not an application of systems theory per se but rather a content-free use of systems concepts to guide the development of models of possible improved situations. These models, which are developed using suggested techniques, are for comparison with the description of the problem situation and with other types of models. This provides new perspectives, helps foster new insights and stimulates creativity, all of which enhance learning as an intrinsic part of the overall process. These comparisons also serve to outline possible changes that could be made to improve the situation. Subsequently, these possibilities are checked with those involved for feasibility and desirability, a process that may necessarily involve some negotiation depending on the extent to which differences in viewpoints and positions may create conflict over possible changes. In this regard, there is attention throughout the process to the relationships among those involved. This, along with other technical aspects of the process, may identify the need for training as an outcome of the research. The final phase of the process involves planning and implementing the agreed changes which brings those involved directly back into the real situation which completes the cycle.

It is important, however, to stress that there is considerable flexibility in how these activities are undertaken within the process. There may be a sound rationale for varying their order. As continuous learning, especially once the techniques have been established, the process may be addressed as a whole with free movement throughout the phases according to need.

The strength of this methodology to research community-based health problem solving lies in its congruence with the issues that were raised above as important for improving the fit of health development programs, specifically with the philosophy of QoL/BMN. SSM is based on a participatory process that enhances empowerment of those involved though learning about the problem situation and how it may be improved. Reiteration enhances the practical manageability and sustainability of research and action in improving a problem situation and it has the potential to be generalized beyond what may have been the initial problem focus. For these reasons, it was considered to have strong potential as a means of meeting the expectations for the study as well as for making a broader contribution to the development of PHC in Thailand. However, there were important issues which had to be considered in undertaking SSM in this study. The development of the methodology by Checkland was undertaken in a particular setting where there was not much sociocultural variability. The studies were primarily addressing managerial problem situations in British corporations and institutions. While some studies were subsequently undertaken on agricultural and resource management issues (Wilson and Morren, 1990), there had not been an application of the methodology and its techniques in the type of community or in a similar cultural setting as that found in this study. The potential of this methodology as combined research and action for health development was considered sufficient to warrant its adoption for this research. The focus of the research questions was, therefore, how use of SSM would be appropriately applied as a means of studying and improving community-based health problem solving.

RESEARCH QUESTIONS

Taking the position that Soft Systems Methodology (SSM) was an appropriate methodology for undertaking an exploratory participatory action research case study of community-based health problem solving at the District level in Thailand, it was determined that the research would have to initially address the issues of the fit of the methodology and techniques with the local context. Therefore, the research questions were framed as:

1. What adaptations of the methodology are necessary for undertaking SSM in the Thai health development context?
2. How can the technology of SSM be transferred in the actual work setting? and,
3. What are the implications for the practice of public health?

SSM is not a highly structured step-by-step procedure but rather a flexible process that, in terms of its very design, evolved through a learning process of repeated practice. The methodology is intended to be responsive to the needs and personal style of a user and to the characteristics of a particular situation. The rules that define the process are quite specific but, for the most part, there are only guidelines within which the analyst may find various ways to engage in SSM studies. With the lack of applications in similar settings, there was a need to address the issue of how SSM could be applied within a District health development context. It was expected that, given the sociocultural characteristics of that context, it would be necessary to adapt the action research process accordingly. However, there was no presupposition that any particular adaptation would necessarily be involved. This question was approached with an open perspective on the possibilities, using only the rules and guidelines of the SSM process as a starting point for learning. It was

considered necessary to allow the answers to emerge from the situation and those involved in answer to the first question.

It was noted above that the operationalization of PHC in Thailand has been constrained by the lack of knowledge, skills, and attitudes among those in the health service system as well as within the community. Again, it was not considered appropriate to presuppose the factors that may constrain the transfer of SSM technology into the work setting of the District. Checkland's studies were primarily undertaken as limited-term exercises by outside consultants. The expectation in this study was that the SSM process would, if appropriately adapted to the setting, become a part of the normal work situation. Therefore, whereas in a consultation the technology may remain primarily with the consultant, in this setting it was expected that the technology would need to be transferred into the situation to the greatest extent possible. The second question addresses this issue and the study was accordingly designed such that the outsiders role was delimited and such that the study would conform to normal working situation as much as possible.

Given the critical reviews that suggested that development programs and the PHC paradigm in particular are in need of reformulation, new approaches and fresh strategies, it was expected that the responses to the first two questions would have implications for the practice of public health in Thailand in general. The issue of health problem solving was directly related to the current QoL/BMN program and to the PHC approach adopted by the Ministry. In a broader perspective, these are related to issues of research, manpower planning and development, and professional education. As suggested at the outset, the critical consideration was that of the fit between the various components of a program, and between the program and its places of implementation. This question was intended to address these broader considerations according to the outcomes of the study.

CHAPTER 2:

CONCEPTUAL FRAMEWORK: A REVIEW OF THE LITERATURE

It doesn't mean that society develops mechanically and ideologies just tag along. What's crucial in a revolutionary era? Why, consciousness. And what is its chief characteristic? Why, precisely not just to reflect social conditions but to reflect ***on*** *them—within limits, mind you, within limits.*

Iris Murdoch: **Under the Net**

INTRODUCTION

One of the main distinctions between Soft Systems Methodology (SSM) and other problem-oriented research methodologies is in the way that problems and solutions are defined. Most problem solving models and research methodologies, both basic science and systems, regard the definition of "the problem" as the first step of the process with emphasis placed on the need for specific, clear and quantifiable definitions. Similarly, there are clear expectations that the solution can be defined or at least evaluated in some specific way. Much of the literature on problem solving is aimed at providing assistance in overcoming various types of barriers—complexity, novelty, assumptions, and so forth—to perceiving the problem or its solution. There is usually an assumption that both tasks are ultimately possible. An underlying principle of SSM is that many problems, especially those involving numbers of people in activities, can not be defined or solved in this sense because of the different viewpoints, expectations and needs among those involved. This intrinsic and difficult to reduce variety in the problem situation requires a different approach to problem solving.

For an analyst in such a situation, there is a need to resist the classic tendency to try to define a problem or to search for hypotheses about its causes. The alternative is to allow those involved to cooperatively learn their own way towards improving the situation in a progressive manner. The analyst becomes more of a facilitator of this learning-cum-problem-improving process. At the outset, therefore, it behoves the researcher to enter the situation with an open perspective towards the nature of the problem. However, in identifying a problem situation, one that is not clearly defined in terms of causes or solutions, there may well be issues that are necessarily a consideration. In the research problem under consideration, the QoL/BMN program entailed certain specific expectations about the outcomes of the process of health problem solving. These outcomes were described above as improvements in: quality of life, participation, learning and empowerment, and management. In this chapter, the aim was to review these issues, not for the purpose of establishing hypotheses about the causes of the problem situation, but rather to provide themes for consideration of the issues involved and for discussing the outcomes of the research as they relate to the research questions. This review addresses, first, the models of problem solving so as to consider what is expected of an improved model, the purpose of the problem solving model in the research context in order to focus on relevant issues which included the expected outcomes described above.

MODELS OF THE PROBLEM-SOLVING PROCESS

Problem solving can be simply described as an undertaking designed to close the gap between an existing situation perceived as undesirable and one that is desired or more desirable. Such a description encompasses a wide range of possible problem types and some distinctions are necessary for consideration of the process of problem solving—the set of decisions made and actions taken in closing the gap. Van Grundy (1988) distinguishes problem types according to their degree of structure;

more structured problems are those which are relatively simple and familiar while less structured problems are novel, more complex and/or may involve less well-understood factors. The former type would include situations where a familiar or standardized solution may be efficaciously applied and where the processes involved would probably not require special consideration. The latter type of problem, those which contain intrinsic factors that are likely to impede the closing of the gap, are those for which structured problem-solving processes and their constituent techniques have been developed.[1] The conditions of health development are considered to be those of the latter type, those requiring the commitment of special efforts for problem solving.

Models of the problem-solving process essentially consist of four main stages: (1) problem identification and analysis, (2) solution identification and analysis, (3) implementation of solution, and (4) evaluation and feedback. An additional feature of these models is the reiterative nature of the process as a whole; the necessary repetition of the cycle for achieving an appropriate solution, for closing the gap. With unstructured problems, emphasis during the first stage concerns the definition of the problem under conditions where there are considerable unknowns and significant complexity. Van Grundy (1988) describes this stage as successively diverging to acquire a wide range of pertinent information about the problem situation and finally converging on a clear, appropriate statement of the problem. Having arrived at such a statement, the second stage involves generating alternative solutions where again there is a need for consideration of a wide range of information which is subsequently reduced through analysis and evaluation, to arrive at possible solutions for implementation.

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[1] These 'distinctions' should be regarded as relative along a continuum. They are useful for distinguishing among techniques for selection purposes, for consideration of the resources required, etc. However, the models of the overall process are considered applicable to any activity describe as problem solving irrespective of the techniques employed, the degree of conscious organization involved, or the resources committed.

Generalized models of the problem-solving process are useful for identifying its major stages and their relationships, for examining the decision making involved in each stage, and for graphically describing the whole as a reiterative process. They are also useful for identifying generalized constraints on efficacy which can serve as the bases for assessing particular models in specific situations. Van Grundy (1988) suggests preconditions for undertaking structured problem solving as well as some criteria for the use of specific techniques within such a process. Brody (1982) identifies specific problems in the decision making involved in particular stages.

Van Grundy (1988) suggests that structured problem solving should only be undertaken if five preconditions have been met. First, there must be a real gap between existing circumstances and one that is desired. Closely related to this is the second precondition that there is awareness of the gap and the third requiring that there is motivation to take action to close the gap. These criteria recognize the subjectivity of what may be perceived as a problem and the possible variations among people and over time. The fourth precondition is that the gap must be measurable such that progress can be determined and the fifth is that there need to be sufficient resources available to solve the problem. The author suggests that failure to satisfy any one of these preconditions would indicate that a structured problem-solving effort would not be justified and that the problem situation should be re-evaluated accordingly.

There are difficulties, however, in referring to these criteria as 'preconditions' for that would, first, assume that it is possible to make such decisions before entering the process. Determination of the availability of resources to solve a problem before the problem or the solutions have been clearly identified, for example, is not a reasonable expectation. These caveats also overlook the possibility, a very likely one, that any one of these factors could itself be a part of the problem and a necessary factor for consideration as such. Referring to the Van

Grundy's model itself, there must be some stimuli, recognition of need, to initiate problem solving. Beyond that, it would be difficult to specify further preconditions that should not more appropriately be a part of either the initial stage, problem identification, or of the first complete cycle of a reiterative problem-solving process. The issues would have greater relevance within those contexts.

Brody (1982) identifies eight potential decision making 'traps' of problem solving which correspond well to the criteria cited above. The first two traps, 'non-sequitur thinking' and 'circular reasoning' are violations of logical consistency where, respectively, logical connections are missing or are assumed without adequate proof. The next two traps, 'oversimplification' and 'misusing analogies' are violations of of the criterion of realism with regard to problem definition where significant cause-effect variables are overlooked, either in a particular case or in comparisons between cases. The next three traps, 'grandiose solutions', 'limited solutions', and 'palliatives', are violations of realism in identifying solutions due to, respectively, unrealistic expectations (possibly in terms of available resources), lack of completeness, and a focus on symptoms rather than underlying causes of a problem.

The last trap is worthy of special note as it introduces a consideration that runs counter to the underlying assumption apparent in the above models that using a logical, rational, systematic problem-solving methods will improve the outcomes of the process. This trap, 'the denial of nonrational problem-solving' highlights the need to recognize the intrinsically irrational components of human behavior. In a sense, this is an element of 'realism' but the emphases placed on objectivity, measurability and logic suggest a bias that may well lead to ineffectiveness of the process as a whole. In particular, the implementation of planned solutions—which has already been described as an area receiving relatively less emphasis in problem-solving models—is an area where affective factors, among others, may prove critical.

There is often a considerable difference between agreeing to do something and actually doing it.

Aside from the description of problem solving as a step-wise series of tasks—an interrelated set of decisions—there is a need to consider its dynamics of the process in terms of factors that may facilitate or constrain the making of decisions of their execution. These may include factors that are directly related to the process or environmental factors which impinge on that process. Van Grundy (1988) addresses this issue in terms of the selection of techniques according to, among other considerations, the people involved. To assist in the selection of appropriate techniques, he provides algorithms which identify critical factors for consideration in the selection of techniques. These are: (1) the type of problem, its complexity, degree of structure; (2) the stage of the process, its purpose; (3) who should participate, their numbers and the extent to which personal preferences need to be accommodated; and (4) the characteristics of the techniques, the degree of difficulty of execution, use of resources such as time and manpower, and need for training.

A WHO publication on health problem solving focuses on the difficulties associated with decision making and problem solving as a group effort (WHO, 1983). The issues identified have to do with the content of problem solving and the relationships between its stages as have already identified but emphasis is placed here on behavioral issues concerning the management of the process itself. These include: group dynamics and team work, communication, and individual viewpoints. A similar emphasis is found in another WHO document which considers the learning needs of those involved in health problem solving (WHO, 1991). This perspective relates the decisions involved in the process with the learning requirements and how these are affected by the methods of learning which, if inappropriate, can constrain the process as a whole. These issues of individual viewpoints, the means by which they learn as part of the process, and the

interpersonal dynamics among the members of a problem-solving team are not emphasized in the general models of problem solving. These are issues which arise from the particular context of application; in this case, from the context of community-based health problem solving.

The general models of problem-solving have usefully described the process as a whole consisting of specific reiterative stages. They have also provided criteria as bases for some general assessments of the process and its components in line with the general theme of fit. Their generality, however, limit such considerations as the purposes for which a specific model is designed and the situation for which it is intended—philosophical considerations—must be included. This is especially pertinent for the specific design of each stage of the process including selection among methodologies and techniques. In the following section these additional factors are considered.

PROBLEM-SOLVING PURPOSE

The universal models of problem solving merely provide a general, definitional description of the process as well as general criteria for its assessment. A particular problem-solving process must be designed in accordance with its purpose and the context within which it operates. While the universal models describe the general aims of each stage of problem solving, a particular model must specify with greater precision both the expected outcomes of each stage and the means by which those outcomes should be achieved. This requires that consideration be given to the existing opportunities for and the prevalent constraints on the achievement of each stage of the process; within the process and within its environment. The purpose of the problem-solving model developed for the QoL/BMN program was described in terms of the expected problems to be solved and

the manner by which the process should be undertaken while the relevant contextual factors were drawn from previous research and other literature. Both of these perspectives offered guidance for consideration of the particular problem-solving process that was the subject of this study.

The QoL/BMN program was explicitly designed for the purpose of achieving certain outcomes (Amorn, 1985, 1988; Amorn & Chical, 1988). First, it was intended to define an integrated set of socio-economic development goals that, in problem solving terms, would represent a standard 'desirable state'. While each ministry pursues its own respective policies and plans, the Ministry of Public Health adopted the PHC approach in this regard. The problems to be addressed, therefore, are those defined in these terms with the desired states being those of the BMN that correspond to the goals of PHC. These are viewed, however, in the context of a broader conceptualization of development suggested by the BMN as a whole.

The second expected outcome was that the process of QoL/BMN will lead to increased participation by community authorities and members in terms of involvement in the decision-making process, contribution of resources, and as beneficiaries in terms of improved quality of life. A third expectation was that involvement in the decision-making process was expected to lead to increased empowerment of the community in solving its own problems. This implies that community leaders and members were expected to learn through undertaking the problem-solving process so as to better understand their problems and how to solve them.

The fourth expectation, which was that the process would constitute a new model for management of the problem-solving process in terms of the acquisition and use of information, and steps in plan formulation This has been supported by a long-term trend towards the decentralization of decision making to more peripheral

levels, along with other specific strategies such as the Self-managed PHC Village program (Nadda, Vina, & Jirapan, 1989; MoPH, 1986). Thus, the QoL/BMN program was expected to constitute a new management approach to development problem solving which involves both government officials as well as community members.

Problem Solving for Health Development

The problems of health development are located at one extreme, in terms of complexity, of the range of possible problem types. The PHC approach in Thailand included ten elements[2] or problem areas which, as a whole, represents significant variety while each of these problem areas is widely recognized as constituting complex causal relationships between biological, behavioral, educational, social, economic, political, and geographical, factors. These complex causal relationships are also recognized as continually changing between locations and over time. Such problems are, therefore, quite possibly threaten problem-solving, especially concerning 'realism' or the ability to account for all significant variables and their relationships, in terms of the definition of both problems and solution. Such threats can be considered at macro level in terms of the approaches to development adopted as policy and program as well as at micro level in terms of the local practices of problem solving.

The past forty-five years have been a period of concerted efforts to improve, through intervention, levels of development world-wide. During that period, various approaches have been adopted which reflect different assumptions and biases about development processes. These concern the nature of the problems, the

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[2] These include: nutrition, health education, safe water supply, sanitation, immunization, simple curative treatment, essential drugs supply, maternal and child health, endemic disease control, mental health, and dental health (Amorn, 1988). AIDS prevention and control, consumer protection, accident and injury prevention, and environmental health were being introduced as new PHC elements at the time of the study.

appropriateness of solutions as well as the means for implementing those solutions. Sharma and Shastri (1984) describe how the main approaches to development have changed over this period, indicating a shift from primarily economic to more integrated broadly-based approaches with increasing concern for ecological sustainability according to changes in perception. Each of these approaches represent professional or academic perspectives which are based on contemporary theories of development. Chambers' seminal thesis on rural development approaches outlines some of these underlying assumptions and how biases are introduced into learning about development processes as a result (Chambers, 1983). Of particular relevance here are the differences he describes between the perspectives of development academics and practitioners.[3] Such biases in both the philosophy and practice of development efforts have also been noted, for example, by Cernea (1991) and Foster (1984) who call for greater use of social and anthropological perspectives.

Such perspectives however, have also introduced interpretive biases and assumptions about the dynamics of development based on their particular theoretical groundings. Sharma and Shastri (1984) describe development planning as based on either Keynesian or Marxian paradigms both of which, despite differences in their perspectives on prerequisites,[4] emphasis the need for technical and industrial development. The results of efforts during the early decades of development were disappointing; large segments of the populations of developing countries, especially those involved in agriculture, did not receive the benefits of the increases in Gross National Product (GNP) leading to widening income differentials. It also became increasingly apparent that these paradigms did not take sufficient

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[3] Chambers also makes note of the biases introduced because of the favored methods and techniques of study which will be discussed in more detail in the latter part of this chapter.

[4] The Keynesian model is based on economic growth based on expansion of production boundaries while the Marxian model is based on consideration of the social and economic relations in production (Sharma and Shastri, 1984).

account of the social and environmental impacts of rapid industrialization and technological advances.

Various social theories have been advanced during this period to explain development processes. The first major theory of development, rooted in the expansion of European industrial society in the early eighteenth century, was Modernization Theory (Portes, 1976; Cardoso and Faletto, 1979) . This theory's perspective held that development is evolutionary and that all societies can be placed on a spectrum of development which ranges from primitive to the Western ideal of democratic capitalism. Progress was seen as a linear movement across this spectrum toward that ideal, that is, a replication of the European experience, through the process of diffusion. While this ethnocentric characterization of development as resulting from inexorable and impersonal forces (democratization, urbanization, bureaucratization, etc.) has been largely repudiated (Lea and Chaudhuri, 1983; Evans and Stephens, 1988), this traditional-to-modern description of development retains considerable influence to date, especially as applied to the changing behaviors of individuals in developing societies.[5]

Other, more contemporary theories of development have offered different perspectives of the political-economic relations between nations as well as within nations. World System Theory provides a view of international dominant-dependent relations between core, semi-peripheral and peripheral economies. The theory argues that core economies, leading capitalist nations, require for their continued economic growth the domination of dependant peripheral economies as sources of raw materials, cheap labor, as well as for increasing markets (Mintz, 1977; Chirot and Hall, 1982). The semi-peripheral economies, the more successful

[5] The 'moral' versus 'rational' peasant argument which has been derived from the traditional-modern perspective of Modernization Theory is discussed further in the latter part of this chapter.

and advanced of the dependant economies, act as buffers and intermediaries in these transactions.

Dependency Theory describes a similar model but focuses on these relationships as they extend from the international level to the intranational level (Chilcote, 1974). It emphasizes the 'conditioning' effects of the world system on particular local political economies. These two related theories essentially propose that economic development operates through the maintenance of a system of differentiated economies where each level plays a specified, unequal role. While this perspective has greater analytical utility than the linear modernization model, it has been criticized as being teleological and too generalized to account for local histories and, especially, to account adequately for the operation of specific intranational forces (Koo, 1984a; Evans and Stephens, 1988).

In response to these criticisms, the issue of specific forces within national political economies has been addressed by theoretical treatments of the state (Koo, 1984b), and class (Frank, 1966; Cardoso and Faletto, 1979). In the context of World System-Dependency theories, Class and State theories describe the roles played by these social institutions in development. The state, or national bureaucracy, is distinguished by its legitimate use of political, economic, and social control. It is characterized by its capacity to use that power to achieve development goals and by its relative freedom to exercise that control over various classes or segments of the society while maintaining its legitimacy or acceptance among those various groups. Its main role is to mediate between external and internal political and economic forces as well as between intranational classes and groups. Class theory is directly linked to this and examines the direct relations between classes in terms of their relative power and their means of promoting their interests with regards to others; through the state or through extra-bureaucratic forces.

As the main theories explaining development, these have had considerable impact on the formulation of intervenient approaches in various sectors in terms of defining philosophies and methodologies. There has clearly been a transformation of perspectives across time in response to anomalies, limitations and failures in application. However, unlike Kuhnian paradigm shifts, contemporary social science theories of development have been reformulated and synthesized to achieve greater analytical power for a subject matter that is in constant change (Evans and Stephens, 1988). Koo (1984a) has specifically called for an integrative framework for an examination of the interactive processes operating between the world system, state and class, and the pattern of development. Giddens (1987) takes this point much further by suggesting that the fundamental differences between natural and social sciences necessitates the adoption of a new view of the subject matter. He suggest that, because social systems and institutions are in constant change as a result of human endeavors, their study must involve more than just description and and explanation; it must also involve a critical imagining of what future social changes are both feasible and desirable and how they can be achieved. This has important implications concerning problem solving for health development. The first concerns PHC as a health development model and the second concerns problem solving as a means for applying such a critical imagination to health development.

The introduction of the PHC approach represented the formulation of a new paradigm for health care; one that is indicated by the definition of health as being concerned with not only physical and mental well-being but also social and economic well-being (WHO/UNICEF,1978). This, as described by Barton (1979), was the advent of a new 'era' in health; one that focussed on the politics of health. This is interpreted, again, not as a Kuhnian shift of paradigms but rather as an additive progression whereby new perspectives are incorporated into the previous view of health in response to its inadequacies and biases. Such deficiencies are noted by Scrimshaw (1974) and England (1978) who refer to 'myths' of international health

planning. These myths, for the most part, refer to assumptions that are erroneous because of a lack of realism about the social environment; what England (1978) refers to as "oversimplifications."[6] This political era, ushered in by the PHC approach, brings health development even more directly in line with the general development paradigms described above; providing it with a broader, richer base in sociological theory but also far greater complexity and uncertainty. It raises the challenge, as suggested by Gidden's (1987) thesis of critical imagination in social sciences, of working towards the means to achieve desirable and feasible futures.

The proposition that health development in a political era must address complex and unknown realities associated with progressing towards a more desirable state draws upon the issues of problem solving. The difficulties described above in constructing a theoretical base for rural development suggest possible threats to the problem-solving process; especially in terms of its ability to achieve realism. To iterate, realism refers to the ability of a problem-solving model to account for all significant variables and their relationships necessary for defining the problem and its solution. Approaches to development have been characterized as based on erroneous assumptions, oversimplifications, generalizations, narrow viewpoints, etc., i.e., a lack of realism. Such errors have been attributed by Checkland (1981), Giddens (1987), Evans and Stephens (1988) and Capra (1989) to the assumption that social phenomena can be studied by the same means as natural phenomena; an assumption they challenge because of the irreducible, labile nature of social phenomena. This view has also been adopted concerning technical aspects

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[6] Scrimshaw lists unjustifiable assumptions about planning health services for developing populations which include: (1) knowledge of disease agents is sufficient to explain causation and design interventions; (2) the priority of curative over preventive care; (3) the primacy of modern health care in reducing mortality rate; (4) programs are justified by good intentions; (5) poor people have more time to invest in seeking services; etc. England adds: (1) technical knowledge is sufficient to prevent disease; (2) the effects of interventions are well understood; (3) because most poor people live in rural areas, efforts should be concentrated there; (4) referral systems work as they are designed; etc.

of development problem solving by Checkland (1981) concerning management, Thompson and Warburton (1985) concerning environmental conservation, and Maxwell (1986) concerning farming systems.

Two main themes, concerning this proposed research on health problem solving at the district level, emerge from this consideration of the theoretical bases of development approaches including PHC. First, a study of a particular problem-solving process must include an examination of the theoretical bases explicitly and implicitly underlying the adopted approaches (PHC and QoL/BMN). These issues were considered as part of the initial problem description based on a review of the literature and as an element of the problem situation. Second, the methodologies and techniques employed in undertaking problem solving were identified as potential threats to problem solving in terms of this research and in terms of a consideration for the description of the problem situation.

Participation in Problem Solving

The QoL/BMN approach is explicitly designed to encourage community participation in health problem solving which is expected to facilitate self-determination, self-reliance, self-management and self-care (Amorn, 1988; Amorn and Chical, 1988). The use of 'self' is interpreted as indicating problem solving which is undertaken *primarily* by the community in terms of decision making, resource mobilization, organization, and technology, respectively. The process as a whole should, however, be seen as involving a nexus comprised of the community, government services, and possible third parties: the business sector, NGOs, etc. with relative roles determined by circumstances.[7] While the subject of participation

[7] While the program aims to increase participatory capacities of the community, here is no evidence to suggest an expectation that the community should be solely responsible for these aspects of health development. While the QoL/BMN process allows for independent efforts by the community where possible, there are provisions for the government services to provide resources and other support for

focuses on the role of the community, there is a need to consider also its relationships with the other actors as informed by development theories described above in terms of the factors facilitating or inhibiting participation in problem solving.

The meaning of participation varies according to the philosophy of an approach. An indication of what is meant by participation can be derived from statements about the expected benefits which reflect the inputs, processes and outputs of a problem-solving process. A selection of the literature concerning participation in general community development (Paul, 1987; Alamgir, 1989) and community health development (Hollnsteiner, 1982; White, 1982; Oakley, 1989) outline five distinct, albeit related, types of benefits from local participation: resource mobilization, marketing, organization/management, learning, and empowerment.

Resource mobilization, while referring primarily to financial and material resources, also includes social resources such as local knowledge and leadership. An essential part of the participatory approach is the addition of these resources to those provided by external sources. Bugnicourt (1982) suggests that without these additional resources, community development would not take place at all. Organizational and managerial issues are considered in terms of the appropriateness, efficiency and sustainability of development activities which are seen as enhanced by local involvement. White (1982) considers the lack of organization, along with the lack of adequate stimuli (marketing) to be the two main constraints on local development initiatives. Marketing is used to summarize the authors' arguments that participation will facilitate the people's acceptance of development projects by responding to felt needs, adding value, increasing

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specific activities, especially with regards to professional expertise, as well as for the facilitation of the process as a whole.

confidence, motivation and acceptance. Learning is used in this instance to refer to capacity building in terms of, e.g., managerial skills, and increasing understanding about, e.g., disease processes. The idea conveyed by these authors is that participatory activities provide opportunities for training as a traditional transfer of knowledge, attitudes and skills which is distinguished from empowerment by the political implications of the latter. Empowerment is a special case of learning where community members increase their understanding of the socio-politico-economic environment so as to be able to control the processes involved.

Wolfe (1982) makes a distinction between development approaches which are based on social reform and popular determinism and those which essentially accept a primacy of institutional intervention, participation can be interpreted quite differently. In the former (supportive) approaches, participation as an empowering force is a fundamental basis of development; according to Alamgir, "participation of the people is the other name of empowerment of the people" (1989, p. 8). Values such as equity, human solidarity and creativity are incorporated into these approaches. The latter (intervenient) approach tends to use participation as either patronizing or, in more extreme cases, coercive means of facilitating the achievement of predetermined goals through co-optation (Bugnicourt, 1982; Midgley, 1986b). Markets supported by institutional intervention are the key determining forces. The benefits listed above, with the exception of empowerment, can be interpreted as grounded in the philosophies of either of these two approaches; they may be supportive of empowerment or they may be instruments of co-optation. Empowerment as the *sine qua non* of participation can be described in terms of the varying level of control over decision making which can be explained with reference to the main theories of development.

Distinctions in the level of participation can be described in terms of a 'ladder', the steps of which reflect the level of power exerted by the community (Arnstein,

1969). Arnstein's seminal thesis on citizen participation distinguishes between eight levels of participation which are grouped according to those reflecting non-participation, tokenism, and participation.[8] The former two represent various means for co-optation for and control of development activities where various strategies are employed to extract resources from the community without its having any power to control the outcomes. Levels of participation are described in terms of the degree to which the community has control over the decision-making process, from negotiated partnerships to full managerial control. Arnstein notes that her model simplifies the concept of community, overlooking their characteristic heterogeneity, and is essentially descriptive as it does not provide an analysis of the constraints on or opportunities for citizen control. Such an analysis can be made on the basis of the prevailing theories of development as they pertain to the experiences of participatory development programs.

Participatory approaches to development have had a long history (Madan, 1985) and a review of the outcomes of earlier efforts is instructive for determining the significant factors affecting participation. The Community Development (CD) approach of the 1950-60s was a well-documented development approach which explicitly called for self-organized social action (Foster, 1982; Holdcroft, 1984; Madan, 1985). By these accounts, however, not only were these programs disappointing in the achievement of their overall development goals, but they failed specifically to achieve the expected sustained mobilization of the community and its human resources. The factor singled out as the most significant barrier to the reification of the participatory concept is the dominance of decision making by external development agents and local elites; that is, the lack of necessary social change leading to adequate control by the target groups of their own development activities. Similar effects have been found in similar participation-based

8 Non-participation includes manipulation and therapy; tokenism includes informing, consultation, and placation; while citizen power includes partnership, delegated power, and citizen control (Arnstein, 1969: 217).

approaches in more recent times (Wolfe, 1982; Bugnicourt, 1982; Gow and Vansant, 1983; Midgley, 1986b; Uphoff, 1986; Rigg, 1991). Overall, these authors conclude that, while there has been considerable promotion and application of participatory approaches for a long time, there has been a continuous failure to undertake the necessary steps to ensure that community efforts are not undermined by external intrusions and/or internal fractionalism.

Foster (1982) has noted the similarities between the PHC approach and that of CD. He suggests that, with the experience of the latter and other development approaches to learn from, the PHC approach has the potential to achieve the elusive goal of true participatory development. Indications are, however, that he is optimistic. Marchione (1984), La Forgia, (1985), Ugalde (1985), Madan (1987), and Brownlea (1987), representing a wide range of national experiences, report that community-based PHC programs tend to be repeating the same errors as the earlier approaches. Specifically, they are being planned as unisectoral responses to pre-determined needs, implemented with inadequate and unsustained support for local organization, and are adversely affected by conflicting local interests. A problem to add to those found in previous approaches is the reluctance to accept, even hostility towards, the PHC principle of participation among the medical profession (La Forgia, 1985; Brownlea, 1987). A survey undertaken in three Asian PHC programs by Rifkin (1983) found that community health workers were even more conservative in this regard than the physicians involved.

The continuing failure to achieve the goals of true participation as envisioned in the philosophies of contemporary development approaches needs to be examined. From a problem-solving perspective, there are indications of the lack of realism in the models adopted as well as a related lack of logical consistency between their philosophies, methodologies and techniques. The continuing difficulties associated with participatory approaches centers around three main issues: the capacity for

participation within local communities, the characteristics of participatory approaches adopted by development agencies, and the nature of relations between communities and development agencies.

The capacity of communities to participate in their own development has engendered considerable debate focused on questions of, first, how communities participate in prevailing circumstances including the constraints and opportunities consequently involved, and, second, what means for facilitating participation are therefore indicated. The first question has centered on a traditional-modern distinction which has been derived from modernization theory.[9] The main debate in this arena is whether the peasantry are essentially "moral" (Scott, 1976) or "rational" (Popkin, 1979). Scott's thesis is that peasants are primarily oriented towards maintaining a secure subsistence existence where they are inclined to avoid individual risks and rely on mutual reciprocation for a redistribution of resources. Popkin counters this argument by stating that peasants are fundamentally calculating and are willing to make both short- and long-term investments for individual gain. Self-advancement is the ultimate goal.

The implications of these views with regards to participatory development are significant. If rural communities are primarily moral, then, while community participation would, in some respects, be easily facilitated, the avoidance of risk and change would hinder attempts to introduce innovations, technology, or new principles for participation such as those which may be regarded as challenges to the existing delineation of status. The rational thesis implies that, if a clear benefit for peasants were evident, then innovation and change would be more readily adopted but that participatory efforts would require support, especially for negotiation and

[9] While the central thesis of modernization theory of development as a process has been repudiated (see above), the characterization of the peasantry as traditional (pre-capitalist) and modern (capitalist) has been retained for the description of changing values associated with development (modernization).

conflict resolution. Whether moral or rational values predominate depends on a variety of factors and historical experiences and there is no simple relationship between these theoretical perspectives and the possibilities for participation. As noted by Madan (1987) and Brownlea (1987), much depends in either case on what the local population learns from experience about the purposes and conditions of participatory programs.

Ugalde's (1985) review of community participation in health development programs in Latin America found that there was an overall lack of success due mainly to what he considered to be two false underlying assumptions: that the traditional values of the poor are the main obstacles to development, and that the poor are incapable of self-organization. He suggests that the local population has a long tradition of cooperative participation, even with modern characteristics, and that the root of the difficulties lay in the nature of the participation proposed by health development agencies. Agency-sponsored programs, he contends, attempt to impose forms of participation which serves agency rather than community purposes. La Forgia's (1985) study of participation in Panama support these findings. Holdcroft's (1984) analysis of the decline of the CD movement points out that many of those participatory efforts served to strengthen local elites and so exacerbate political and economic differentials among local population groups. A similar reflection is offered by Brownlea (1987) who suggests that there is a difference between capability and capacity to participate and that the methods of promoting participation—the extent to which they address needs to build both capability and capacity in support of stated objectives—will determine the response received from the community.

It is necessary to make a distinction between participation that arises spontaneously within a community in response to a perceived need, and that which is based on a suggested or imposed need and introduced from without (Midgley,

1986a). The former, suggesting autonomy, is the ideal of participatory approaches while the latter is characteristic of approaches adopted. The reasons for these discrepancies can be viewed from the perspective of theories that explain the interests of the state and other development agencies. Midgley (1986b) concludes from a number of studies that, while cases of active suppression of participatory movements are rare, there is little evidence of state support for participation that approaches the ideals suggested by proponents. Rather, he finds that, for the most part, state bureaucracies have tended to adopt incremental or manipulative modes of participatory development. Incremental approaches are vague and poorly implemented while manipulative approaches actively make use of participatory activities for its own purposes. The purposes referred to include the promotion of the power of the state itself or of the interests of specific groups, especially the entrepreneurial class. Moreover, there are also observations that large bureaucracies have an administrative culture wherein there is a tendency to believe that all that is right (correct) flows from the center (Madan, 1987; Brownlea, 1987). This serves to exclude the community from access to decision making. Participation, especially with empowerment, increases community control and government accountability which may be seen as a threat to government agencies involved in development (Ugalde, 1985; Uphoff, 1986). Such observations concur well with the findings cited above.

While Midgley (1986b) noted that participatory efforts in the health field were not found to be especially manipulative, others have criticized medical professionals as being resistant to participatory programs that threaten their position of authority (Brownlea, 1987; Madan, 1987). Brownlea (1987), in particular, describes the participatory approach of PHC as a direct threat to the traditional position and roles of the physician, leading many to reject or minimize the political implications of participation which, following Midgley's argument above, would tend to result in incremental or manipulative modes. Both Ugalde (1975) and La

Forgia (1975) reported such findings from Latin America. Cohen and Purcal (1989) describe the PHC approach as contradictory with regards to its insistence on scientific soundness which enforces the control of development by professionals.

Learning and Empowerment through Problem Solving

That participatory problem solving[10] should result in learning has been indicated in the literature by its proposed benefits described above: it should enhance capacity building (Paul,1987), training (Alamgir, 1989), education of the community as well as health personnel (Oakley, 1989; WHO, 1991). This expectation has been adopted within the QoL/BMN program, in similar terms, as indicated by the 'guiding principles' described by Amorn and Chical (1988). Describing the proposed processes for QoL/BMN, these authors refer to changes in knowledge, attitudes and practices regarding the supportive relationship between 'the people' and 'the government'[11] needed for the facilitation of, respectively, self-sustainability and decentralization , and, regarding the interaction between communities needed for the proliferation of the program through TCDV. Education, in this sense, refers to the learning process without regard to its political implications which are discussed separately as empowerment. The framework adopted here is based primarily on the experiential-leaning model described by Kolb (1984) which explicitly interrelates learning and problem solving processes.[12]

Kolb distinguishes experiential learning from behaviorist, idealist concepts of learning which predominate in most modern, institutionalized curricula. The latter

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[10] 'Problem solving' is used here as synonymous with 'development'.

[11] It should be noted that reference is made to learning by both community and development workers. As discussed in the preceding section, these two groups are often treated separately rather that in terms of a joint enterprise as this suggests.

[12] Kolb also relates these processes to the research process, as discussed in the following section on methodology, as well as inquiry, decision making and creativity.

are based on notions of basic or central kernels of knowledge that, when internalized, form an a priori basis for one's pattern of thoughts while experiential learning occurs as a creative process through one's interactions with the environment. Drawing on the work of John Dewey, Kurt Lewin, and Jean Piaget, his learning model is based on two dialectics of experience: first, conflict between concrete experience and abstract concepts which are differing ways of gathering information form the real world, or prehension, and, second, conflict between active experimentation and reflective observation which are the means for transforming or grounding this information in concrete or abstract terms. Both are required. Placed on horizontal and vertical axes, they create four quadrants which represent the basic forms of the learning process: divergence, assimilation, convergence, and accommodation; each representing a possible combination of prehension and transformation.

Kolb suggests that the 'ideal' learning process involves resolution of the conflicts between the dialectics of experience such that all four forms of learning are involved. He notes, however, that there are individual, cultural and situational variables such that the forms are differentially emphasized in application. By describing the overall learning process cyclically, in relation to other adaptive processes, including problem solving, Kolb describes how the different forms of learning interrelate to one another and how this corresponds to different learning competencies. Divergent learning, which corresponds to comparing models to reality and identifying problems, is associated with being open-minded and gathering information. Assimilative learning, which corresponds to the selection of a problem and the consideration of possible solutions, is associated with organizing and analyzing information and testing ideas. Convergent learning, which corresponds to the evaluation and selection of solutions, is associated with experimentation with ideas, setting goals and making decisions. Accommodative learning, which corresponds to the implementation of solutions and the selection of

models, is associated with commitment, seeking opportunities and dealing with people.

This description of experiential learning—a cyclical process ideally involving different styles of learning as determined by the nature of the stage of inquiry—provides further insights into the problem-solving process; especially in terms of the nature of each of the respective steps. This will help indicate, for the respective stages, what competencies are required , how situational characteristics may determine differences in emphasis afforded and, therefore, in what way resources should be invested. For example, the emphasis placed in Van Grundy's model on the problem and solution identification stages for unstructured problems is congruent with Kolb's thesis and further suggests that divergent and assimilative learning competencies should be emphasized during these stages. Another use of the experiential-learning model would be for interpreting Brody's (1982) traps in terms of learning deficiencies within each individual stage or between stages of the process as a whole. 'Oversimplification', for example, can be viewed as deficient divergent learning where the necessary competencies of openness and sensitivity in gathering information.

The view of problem solving—where progressively closing a gap between ideal and real involves continuous learning about the problem situation through experience—is a useful combination of theoretical frameworks. It is useful for elaboration of the processes involved in the various stages of problem solving and especially so for the identification of potential threats to problem solving in terms of disproportionate emphases placed on particular learning styles, the lack of necessary competencies at different stages, and biases introduced by particular philosophies, methodologies, and techniques of learning. This last point is a theme discussed by Paulo Freire (1974, 1985) in political terms, which relates usefully to the issues concerning development approaches discussed above.

Problem solving as a learning process requires some consideration of the nature of the learning involved and especially its control. The expectation that participation leads to empowerment—or is itself an empowering force—suggests that there is an increase in control over decisions making by those participating. Kent (1988, p. 5) equates empowerment with development: "Empowerment is development. *To be empowered is to increase your capacity to define, analyze, and act on your own problems.*"[13] This leads to a view that problem solving is learning of a particular type and that control is an important distinction of that type. Freire elaborates this theme with his thesis on, "learning to perceive social, political, and economic contradictions, and to take action against the oppressive elements of reality" (1974, p. 15).

Freire's thesis on education delineates between two types of education: either that which facilitates or that which constrains participation (empowerment: an increase in capacities vis-a-vis problems). As Shaull states in his foreword to Freire's book:

> There is no such thing as neutral education. Education either functions as an instrument which is used to facilitate the integration of the younger generation into the logic of the present system and bring about conformity to it, *or* it becomes 'the practice of freedom', the means by which men and women deal critically and creatively with reality and discover how to participate in the transformation of their world. (Freire, 1974, p. 13-14)

This has important implications for problem solving. Regarding the placement of the participant directly into health development as a political process, attention must be given to factors which constrain any stage of the problem-solving process by virtue of their influences on the learning involved. These possible influences have already been outlined as the theories of the political economy of development. This

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[13] It is noted that this in agreement with Alamgir's (1989) definition of development—that participation is development—cited above where empowerment is a qualified synonym for participation in the same way that "involvement" is sometimes used. It is also noted that these capacities are essentially those for problem solving.

is also particularly important concerning the methodologies and techniques selected. Freire's thesis has as a main consideration the means by which learning takes place; specifically, who controls the content and process of learning. In his viewpoint, the relationship between teacher and learner—and this can be equated with developer and developed—is of fundamental importance.

The perspective provided by theories of political economy regarding the possibility of empowerment of the peasantry is not an optimistic one. The views of Dependency, State and Class theories suggest that the essential relationship between the poor and their superiors is one of control by the latter over the former.[14] Both moral and rational peasants theories, despite their differences would both predict an acceptance of such control; the rational peasant because of his enlistment in a modern economy, and the moral peasant through his maintenance of patron-client relations characteristic of reciprocal, subsistence societies. Freire's (1974; 1985, Chs. 6 and 13) view is one of a historical progression of humankind towards a realization of its humanity through the transcendence of the need for such control as practiced by the controllers and as assimilated by the controlled. His essential means for this progression is education. Freire's educational process is based on problem posing where, "the action and reflection of men upon their world in order to transform it" (1974, p. 52), or praxis, is the basis for liberation (or empowerment). This is distinguished from the *banking approach*—described as education for integrating individuals into the existing structures of control—which is coupled with a paternalistic social action approach to ensure the perpetuation of the status quo for the benefit of the socio-economic elite (Freire, 1974), as is the function of the state (Jessop, 1977).

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[14] While Freire uses "oppressed" and "oppressor", the terms used herein are "controlled" and "controller".

Freire's philosophical explication of the learning process is well complimented by Kolb's model of experiential learning which provides a more concrete basis conceptually for consideration of problem solving as learning. Whereas the threats to problem solving have hitherto been primarily methodological and technical, a learning perspective provides both elaboration of those views as well as an especially significant conceptual linkage to the political economic context and the potential threats therein. These threats have two related facets which reflect Kolb's two dialectics of learning: the limitations imposed on how concepts are used and the limitations imposed on how actions are taken concerning problems solving.

Management of Problem Solving

At the level of techniques, the QoL/BMN program is designed to improve the self-management of the development process (Amorn & Chical, 1988). Particular reference is made to improving the management of: community organization, finance and other resources, information and technology, planning, and decision making in such ways as to be simple, pragmatic, realistic, flexible, feasible, and affordable. It is suggested that this implies a need for the decentralization of control within the system. There is an expectation that this managerial process must be one undertake through a partnership between the community and the government services. The managerial process described by Amorn and Chical (1988) is basically one of a problem-solving or planning cycle. The focus of interest for this thesis is the particular techniques that are appropriate for undertaking this managerial cycle giving due consideration to the philosophical and methodological issues discussed above.

White (1987) summarizes five dimensions of management for development programs: (1) shaping the content of development programs by influencing other

managers as well as program objectives and strategies based on the needs and priorities of communities; (2) enhancing the capacity of implementing organizations in terms of information, personnel, finance, and decision-making management; (3) expanding program resources including political support; (4) coordinating within an interorganizational environment; and, (5) leadership with particular reference to negotiating constraints and mobilizing support within a dynamic environment. While these stress specific managerial requirements in a contemporary context, they are somewhat restricted in terms of the overall range of managerial tasks needed for development. A more complete and therefore satisfactory representation is a meta-model of managerial tasks which combines four major historical models of management in a single framework: (1) rational goal model, (2) internal process model, (3) human relations model, and, (4) open systems model (Quinn et al., 1990).

The meta-model has the advantage of displaying a full range of managerial roles and tasks as distinguished by internal/external orientation and greater/lesser control. As such, the model is intended to represent possibilities which may be selected according to situational requirements. This is especially relevant for a practical consideration of the relationship between problem solving and management. Relevant capacities can be identified according to situational requirements and addressed through capacity-building activities. While the prime orientation of this meta-model is a business context, issues concerning a community self-sustained and self-managed development enterprise can be regarded similarly with adjustments made to suit the particular context. The meta-model is not prescriptive but provides a framework for choice according to identified needs.

It can be noted that White's suggested dimensions of development management fall mainly within the open system model—historically the most recent approach—which addresses the challenges of a rapidly changing socio-economic environment

within which problems are increasingly complex and interrelated. This can also be seen as a response to needs for greater control flexibility and equity through participatory development approaches as discused above. F. Korten (1981) summarizes the obstacles to community development from a managerial perspective as: (1) limited reach, in terms of a lack of resources and/or accessibility of government services; (2) lack of sustainability due to, again, a lack of resources as well as a lack of commitment; (3) limited adaptability which results from centralized planning and a lack of authority at local levels; and, (4) the creation of dependency within the community due to a lack of control at that level. D. Korten (1980, 1981) elaborates on these themes—especially the latter two which are concerned with the the control of development activities—by contrasting "blueprint" approaches (centrally-determined and controlled) with learning approaches to management. Morgan and Ramirez (1983) advocate a similar approach using action research as a basis for the learning that they suggest must be incorporated in management. Uphoff (1986), reviewing a range of development experiences world-wide, outlines the reasons for the failure of the "blueprint" approach as: (1) requiring unobtainable degrees of knowledge about and consensus on the ends and means for action, especially as situations are constantly changing; (2) the heterogeneity of situations where centrally-determined plans are implemented creates difficulties of fit between models and situations; and, (3) the lack of skills in improvisation and innovation among implementers to respond to the variety found in action contexts. Combining the difficulties described by F. Korten and by Uphoff provides a comprehensive description of the managerial threats to problem solving in practice.

These threats correspond well to those broadly described by Brody (1982) regarding oversimplification, misusing analogies, and grandiose solutions. The meta-model provides a useful perspective for the consideration of these issues by differentiating managerial approaches according to levels of control. Freire (1974)

considers management to be one of the means for domination by "oppressors", especially through prescriptive measures, and disqualifies it as a possible means for redressing this relationship which is based on control. Dependency and state theories support this position by describing the functions of state bureaucracies in maintaining such control for the benefit of capitalist-elite classes (Chilcote, 1974; Jessop, 1977). The meta-model suggests that, in response to more recent conditions of the business environment and advances in understanding about these areas, managerial approaches have adopted techniques which, at least in some respects, place less emphasis on control and more on flexibility and adaptability.[15]

Using the meta-model as a framework, problem-solving techniques can be considered in terms of the internal-external and control-flexibility dimensions of management. For the situations under consideration in this research, particular attention should be given to the development context, and, in particular, the expectations for increased participation, learning and empowerment, and the improvement of self-management. To iterate, the meta-model is intended to represent a range of complimentary choices—each quadrant focussing on separate and equally valid domains—with the decisive factors being found in the situational context. The left and right hemispheres represent internal and external orientations respectively. This may viewed alternatively at the village, sub-district, and district levels; each level having internal considerations as well as external relations with other levels. The upper and lower hemispheres represent lesser and greater control respectively. Given the arguments above concerning the issues of participation, learning, and empowerment, the upper hemisphere is deserving of particular attention but, at the same time, control is also necessary, particularly in light of the problems of corruption, fractionalism and other conflicts, inefficiency,

[15]It is also necessary to recognize the contribution of legal measures, internally with regards to, e.g., employee rights and externally in terms of, e.g., accountability for environmental, social and cultural impacts, on such changes in managerial practices in business.

etc. Overall, there is a need to consider the techniques necessary for improvements in problem solving that can answer the challenges thus far discussed.

CHAPTER 3:

METHODOLOGY

All theorizing is flight. We must be ruled by the situation itself and this is unutterably particular. Indeed it is something to which we can never get close enough, however hard we may try as it were to crawl under the net.

Iris Murdoch, **Under The Net**

SETTING

The Ministry identified a Regional Training Center for PHC Development (RTC) as principal institution for this research project. There are four RTCs, one for each of the four main geographic regions of the country (Central, Northeastern, Northern, and Southern), under the authority of the Office of Primary Health Care (OPHC), Ministry of Public Health. These centers are responsible for PHC support activities for their respective regions according to the policy guidelines set by the OPHC under the national five-year health development plans. Through discussions with the OPHC Director and the Chief of the Technical Section, it was decided that the Northern RTC (NRTC), in Nakhon Sawan Province, would be the most appropriate site because of the benefits derived from the experience of using an alternative research methodology and because of their previous exposure to similar research, the Nakhon Sawan PHC Research and Development Project (1985-87)[1].

[1]The Nakhon Sawan Project was a joint WHO-Ministry of Public Health-Mahidol University research and development project on strategies to improve the community self-managed PHC prevention and control of communicable and non-communicable diseases. While the staff of the NRTC were not directly involved in this project, the field research office was located at the Center. The project's Director, Thavisak Svetsreni, a medical anthropologist from Mahidol University, was an advisor for the Krok Phra Project.

The NRTC is located on the outskirts of Nakhon Sawan city[2] which is located 240 kilometers north of Bangkok, on the main road and rail routes to the Northern Region. The province is considered the gateway to the northern region as it is southernmost province of the region. It is approximately 360 kilometers south of Chiang Mai, the cultural center of the North (see Figure 3.1). The NRTC has a Director, Mr. Panyawat Santiwet, and nine government officers who work in the three main sections of the Center—Research and Development, Information and Demonstration, and Training; as well as about twenty technical and support staff. The area served by the NRTC includes the nineteen provinces of the Northern Region.

The selection of the research site to be involved in this project involved consideration of the number and arrangement of units, and identification of the actual locations. The project was focussed on the District and addressed community problem solving. This suggests a nexus of District, *Tambol*, and community levels. The decisions on setting were based on two main criteria; they were variety and manageability. It was felt that there was a need to introduce variety at the District and *Tambol* levels with regards to their respective subordinate units because of the tendency of government programs to be standardized and applied uniformly. An underlying aim of the QoL/BMN program, however, was to introduce flexibility in response to local conditions. Therefore, it was considered important to introduce this factor into the decision on locations. Considerations of manageability were primarily based on the capacity of the research team to conduct the research while also fulfilling their other obligations. This was not only a matter of convenience but also took into consideration the appropriateness of the methodology and techniques for application under normal working conditions.

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[2]Provinces and their administrative capitals have the same name; distinctions are made by referring to *amphoe muang* (city district) or *jangwat* (province).

Through discussions between the Director and myself, it was decided that a research setting consisting of one District Health Center (DHC), two Tambol Health Centers (THCs), and four villages would be an appropriate compromise between variety and manageability. The specific arrangement is described in Figure 3.2. I concurred with the Director's suggestion to select Krok Phra District, which is located 23 kilometers from the NRTC. His rationale for selecting this District was that the District Health Officer (DHO), Mr. Preecha Buncheun, was previously involved in the Nakhon Sawan Project while assigned to a District involved in that project, and was therefore likely to be positive about participating in this project of a similar nature. Furthermore, again considering manageability, the Director felt that the reasonable distance to the District would facilitate the expectedly frequent site visits by the research team. The selection of THCs and villages was undertaken by the research team as part of the research process and is described in detail in Chapter 4.

ROLE OF THE RESEARCHER

While the Director of the OPHC is officially Principal Investigator for all research projects under the Office, the NRTC Director was de facto Principal Investigator for this project. Seven of the Center's nine officers (the research team) were involved in the project as research associates (see Appendix C for roles and responsibilities of those involved in the project)[3]. The government officers at the DHC and THCs were referred to as co-researchers. The roles of researchers is an issue of particular importance in PAR in terms of the control of the research process as discussed in Chapter 1. Consideration was given to the roles of myself, the Director and staff of the NRTC, the government officers at District and *Tambol* levels, and to

[3]Of these seven, one, Ms. Kamalapon, was involved until May 1991 when she went to Bangkok to study for a Master's degree. The other two officers were one who joined as a new staff member in October 1991 and who did not become directly involved in the research activities and another who returned from post-graduate studies in June 1992, after the initial project had formally terminated.

the villagers. A decision that had significance regarding roles was made at the outset of the research: all activities, including as much as possible the roles adopted, would conform to the normal working situation. The four levels directly involved in the research—NRTC, DHC, THC, and village—interact to some extent in the normal course of work. Activities that were not currently normal practice but that could possibly be part of an improved working situation were considered as potentially *normal* in this sense. An example of this would be if the officers from different THCs were to work more closely than is currently the case; in the same way that villagers are encouraged to collaborate in development under Technical Cooperation among Developing Villages (TCDV).

Some of the research activities, such as the NRTC team conducting in-depth interviews in the village, were necessarily outside of the parameters of normal work. These were regarded as being limited to research techniques for this project. However, such activities, were considered in terms of possible recommendations for an improved situation as adapted working procedures, regular research in the work setting, or for a training process. Using the example above, modified interview techniques might be used by the THC personnel as part of their regular work with villagers. Otherwise, the research team was careful about working outside of appropriate normal procedures. An example of this was the Director's adamant rejection of a suggestion to pay DHC and THC officers a per diem to which they were not entitled for attending a meeting. His rationale was that it was their duty to participate in a Ministry project (after having agreed to do so) and that they should not be compensated beyond what was specified by government regulations.

My role raised a number of issues for consideration. There was a need to consider that, as a foreigner, there was only a very limited role in this situation . It is the function of the OPHC to introduce new technology through the RTCs, especially as pilot projects and not infrequently involving foreigners; especially if a UN or

other foreign agency is involved. At the NRTC level, this was not, therefore, problematic in principle, although there was still an issue concerning the control of the process to be considered. In the usual situation, a consultant from the central level of a ministry or from a university is considered to be an "expert" and is deferred to as such. Even one who is recognized as a "teacher" is afforded considerable deference in Thai society, as is an elder. Therefore, given the philosophy of the research and characteristic social norms and values, it was therefore considered necessary to try to attenuate this role disparity in order to facilitate the team's acceptance of control of the process at this level. This was also an issue concerning those who acted as advisors. It was not, however, assumed that a specific relationship was "ideal". The appropriate nature of the relationship was considered as necessarily arising from the learning process given the guidelines of the research philosophy.

In this regard, I decided that I should adopt role norms that were as non-controlling and delimited as possible. The limitations in my ability to speak Thai helped in this regard. At the outset of the project, a number of orientation and training sessions were conducted in Thai by the project advisors. Otherwise, during the course of the research, the transfer of the technology of SSM—information about the overall process, specific stages and their expected outcomes, and the suggested techniques—were conveyed to the research team through written material, and oral presentations and informal discussions with individuals in English (especially the Director and one of the research associates who had a good command of English) where suggestions and clarifications were made for transmission to the group. The exceptions were two occasions when one of the advisors, Mr. Chanin, assisted in clarifying some difficulties or misunderstandings among the team. The Director and the research team planned the research activities along with and in the same manner as their other, regular activities. I consulted with the Director and with members of the team to clarify any questions and to help make decisions about

implementation. Generally, when the team was making preparations for the research, I considered it appropriate to absent myself from the meetings after the introductory discussion to reinforce their sense of responsibility and control. It was impressed upon the team that they were responsible for making the decisions about the research process.

Perceptions of my role among the District and *Tambol* officers, and villagers were also considered to be an issue in terms of their expectations. Projects associated with foreign organizations are often thought of as providing considerable financial and other resources. Moreover, it is quite possible that past experience with foreign-sponsored or academically-oriented research may have created expectations that the research would not be directly relevant or beneficial. Aside from emphasizing to co-researchers and villagers that this was an internal ministry project with only a regular budget allocation, my role was explained as that of a student who was interested in observing Thai PHC activities. I limited my involvement to the role of observer; I often would physically detach myself from discussion groups and take video and still pictures of the activities (from a distance with a zoom lense) and the surroundings. I would discuss my observations with the team members while we travelled or on returning to the NRTC.

My role as a foreigner and as researcher-cum-consultant must have had some impact on the research process at all levels, but particularly within the NRTC where I was more directly involved. Being aware of this, efforts were made to either minimize or to compensate for the interference as much as possible. The implications of my role, however, would necessarily be included in the implications of the outcomes and for consideration of any continuation of the research, including its generalization.

METHODOLOGY AND TECHNIQUES OF RESEARCH

Soft Systems Methodology (SSM) was adopted as Participatory Action Research (PAR) for the study of the improvement of community health problem solving at the district level. As SSM had not been previously applied to a similar situation, this research was undertaken as an participatory action research case study of a district using a conceptual framework that was informed by problem solving theory. Themes of analysis were drawn from the philosophy of the Ministry's program which included health development, participation, learning and empowerment, and management. In Chapter 2, SSM was discussed in terms of its philosophy and overall methodology, and their fit with the health development program. In this chapter, the stages of the methodology and the suggested techniques are described in detail. In Chapter 4, the process undertaken and the outcomes are discussed.

Stage 1: Inquiring into the Situation

Inquiring into a problem situation involves procedures for informing the relevant authorities and possible participants about the research, and securing their agreement to participate. It also entails preparation of the researchers for the research activities. The main aim of the enquiry process at this stage is to capture the totality of the relevant human activity system, especially the various perspectives of the people involved, how they associate their activities with time, place, impact and outcome, their expressions of concern and hope, and how these relate to the more static structures and the relatively changeable processes in the situation as well as their interactions (conflicts created by differences in change rates) (Wilson and Morren, 1990). This enquiry should be undertaken with the understanding that "the problem" is complex and multifaceted with many possible interpretations, and that the researchers need to adopt an open-minded approach in

their data collection—avoiding a premature or preconceived focus. The data collected can include a wide range of both formal and informal as well as qualitative and quantitative types. A prime source, however, is dialogue with those involved.

Much factual information can be found in the literature and information systems. A major part of the effort, however, is concentrated on eliciting the perspectives of individuals and , therefore, the techniques are greatly concerned with verbal and non-verbal interpersonal communication. Such communication also depends on interpersonal relationships among the people involved and so attention must be given to these relations through team building and other means for facilitating communication and cooperative action. The techniques which can be used in this stage, for the enquiry, are those which will elicit a fully elaborated description of the problem situation. Techniques have been developed for improving communication and team building (ASEAN Institute for Health Development, 1991; Johnson and Johnson, 1987; Robbins, 1989), especially for community development (Srinivasan, 1977, 1990). These techniques are designed to assist individuals and groups to become more aware of and more skilled in communication. Dialogue is a prime source of information and the more formal techniques used include the long (in-depth) interview (McCracken, 1988) and focus group discussion (Morgan, 1988). Observation is an important source of information as well as a means of using the "natural rich picture"[4] as a basis for checking, expanding, and integrating information received from various sources, for comparing and elaborating the perspectives of different individuals, and for testing assumptions through dialogue focussed on an observable object or event. The collection of information may involve field note taking, audio recording, and video and still photography. A specific technique for written data recording that is intended to help integrate

[4]There is usually a focus on the acquisition of language in data collection, either written (records) or verbal (interview). Visual information also deserves emphasis as an adjunct method (e.g., to identify topics for discussion, or to confirm meaning), and as a means of placing objects, people, activities, and so forth, into the environment surrounding those engaged in dialogue (natural rich picture).

concrete experience with abstract conceptualization is mind-mapping; a method for recording key words in two-dimensional graphic relation to one another, or dendogram (Buzan, 1983). Overall, the techniques are aiming for increased awareness, plurality of perspectives, holism, and relativity in the inquiry process. A conscious effort is made to avoid premature structuring or drawing conclusions.

With reference to threats to problem-solving, the research needs to be concerned in data collection with capturing reality, especially as viewed from different perspectives, and so, in avoiding assumptions and oversimplifications. As experiential learning this stage primarily involves divergent learning with an emphasis on concrete experiences of the senses. The main difficulty at this stage is maintaining an open perspective and avoiding premature focus on "a problem" ora "need for a solution". Considering participation, empowerment and management, there is a need to take account of the social and political-economic factors which may affect the ability or willingness of people to express their viewpoints and concerns, and to participate freely in this activity (see Stage 2, below).

Stage 2: Describing the Problem Situation

Describing the situation involves an organization of the information collected in Stage One so that themes or patterns can be discerned that suggest areas for possible improvements. The organized information, however, is not intended to describe "a problem". The intention is to create a "rich picture" of the situation which can serve as the basis for reflection and discussion among those who have been involved. Wilson and Morren (1990) suggest that this synthesis should contain at least the following elements:

1. The quantitative and qualitative aspects of structure, process, and climate.

2. The acknowledged mission or principal function of the various groups or organizations in relation to each other and to current themes or concern; this is called primary task analysis.

3. Themes of concern other than those associated with primary tasks, e.g., those relating to structure, process and climate.

4. Significant features of Ws [*Weltanshauungen*] of the individuals and groups involved with the foregoing themes of concern.

5. Various proposals for improvements that the people involved present. (p. 122)

The structure-process-climate nexus is an important component of this synthesis. Structures are those well-established and slow-to-change elements of the situation within which actions occur; they include such things as the physical environment, laws and regulations, social institutions and norms, and so forth; an important characteristic of these elements being control. Against this, one can observe processes which are more dynamic or variable elements such as decisions and actions undertaken by various people and groups, and particularly their interactions. The key features of these two categories are the interaction between their relative rates of change or variability that, creates either a sense of correctness or some level of unease. Another key component of the synthesis are the primary tasks which are the main purposes of activities. As the actual interpretation of these components are dependent on the perspective or viewpoint adopted by individuals that gives meaning to situations—technically referred to as the *Weltanschauungen* [W][5], this is also a key feature of the information synthesis. This emphasizes, again, the importance of capturing these different viewpoints of the individuals and groups involved in terms of those aspects of the situation—the mission, structures, processes and climate—which are of concern to those involved. The remaining elements essentially constitute an attempt to discover what is perceived as "right" and "wrong" (norms and values), and the what's, how's, who's, and when's of improvements that could be made in response to these concerns. This synthesis can usefully be an individual activity but, more importantly, it is intended to be a public

[5]Defined by Checkland (1981,p. 319) as "...the (unquestioned) image or model of the world...."

activity involving those who are involved in the situation. A main reason for this is that it allows for reflection on the information obtained, its confirmation, as well as possible addition and modification. It is important to stress also that this activity is not a closure of the inquiry process; this—like all the outputs of the process—is always open to modification, in response to new information or perspectives and to a changing reality.

The techniques that are suggested for this stage are those which present the synthesis in a graphic, communicable format which displays elements of the situation and their relationships as outlined above such that it can serve as a focus for discussion among those involved. The research team may use such a format for organizing a summary of their data and for checking such characteristics of the whole as logical consistency, completeness and the degree of agreement. The main purpose of the summary, however, is to provide a stimulus for discussion with co-researchers to confirm previously collected information and as a stimulus for further elaboration. Other groups involved may prepare their own versions separately for comparison purposes. One technique which suits this purpose is cartooning wherein information is coded using any variety of symbols: words, figures, icons, etc. which can be related though lines and arrows, etc. This is intentionally using both left and right brain functions, that is, concrete experience and abstract conceptualization, respectively. Another, similar method developed for management purposes is Stream Analysis (Porras, 1987) which has a similar psycho-social foundation as SSM and which also uses graphic displays showing elements and relationships as a means of selecting problematic themes but using categories including: organizational arrangements, social factors, Technology, and physical settings. The important criteria for whatever method is appropriate are: completeness of the information represented including relationships, logical consistency, communicability for all involved, and dynamism as this is not a final

product but one that should be continuously adjusted in response to new information, corrections or changes in the situation.

Concerning threats to problem solving, these guidelines, with their emphasis on differing perspectives and relationships among the elements of a situation, are intended to avoid assumptions, particularly those of the researchers, and oversimplification of the eventual problem definition. As experiential learning, the researchers should employ both divergent and, in synthesis, assimilative learning styles stressing transformation through reflective observation. The management of this stage needs to be focussed in the upper half of the management meta-model which emphasizes flexibility. Of particular relevance are the facilitator and mentor roles of the internally-oriented human relations model, wherein are located the capacities to facilitate group work. For external relations, the innovator and, to some extent, the broker roles are relevant. In the early part of this research, when it may not as yet be clear to what extent these inquiry methods are acceptable to those involved, there is a need to be aware of the possibilities of conflict and/or conflict-avoidance with airing of different perspectives and expressing issues of concern.

Stage 3 and 4: Describing Improved Human Activity Systems

During Stages Three and Four, the researcher turns from the problem situation to conceptual modelling of improved situations. Reality is consciously disregarded as those involved are encouraged to describe their desirable scenarios or preferred future states using systems thinking. This process is undertaken in two main stages: (1) creating root definitions, and (2) building systemic models. The root definitions are concise statements of human activity systems—what they "are", not what they "do"—which describe activities in an improved situation. They describe different viewpoints of as regards the identified issues of concern and primary tasks. Checkland (1981, p. 167) describes these scenarios as having, "...the status of

hypotheses concerning the eventual improvement of the problem situation...." Action words, verbs, are used liberally to describe what the activities are. These descriptive statements are, through group processes, checked for: confirmation by those involved, logic, completeness, and assumptions.

The main technique suggested for Stage 3 resulted from studies on the elements that were deemed important for the description of root definitions (Smyth and Checkland [1976] in Checkland [1981]). The conclusion of these studies, the elements that if overlooked would threaten the validity of a root definition, are summarized by the mnemonic CATWOE: Customers, Actors, Transformations, *Ws*, Owners, and Environment. "Customers" are those who are affected by a systems activities, especially by possible transformations. "Actors' are those who are expected to carry out existing or proposed activities. "Transformations" are activities that convert system inputs into outputs, especially in making improvements. *Weltanschauungen* (*Ws*) are the viewpoints that five a system meaning to people. "Owners" are those who have the power to control the system, in particular, power to control the undertaking of improvements. "Environment" refers to those factors which can not be controlled to a significant extent within or by the system and, therefore, are regarded as outside the systems boundaries. These elements are important bases for the checking, as mentioned above, for completeness and assumptions.

Model building in Stage 4 uses systems concepts to describe that which can accomplish the actions described in the root definitions; the transformations that must occur to effect the improvement, how they are sequenced and how they interrelate. These models may be further elaborated to whatever level is suitable. Checkland issues a caveat that these models should only be notional and not representative of actual activities in real situations. There are a number of ways in which these models may be described using deductive reasoning and systems concepts. These concepts include: holism, emergent properties, hierarchy,

transformations, control, and communication (Wilson & Morren, 1990).[6] The models are constructed on the basis of the verbs used in the root definitions, with each verb in the transformation statement representing the kernel for the development of a sub-system of activities which are built up using systems concepts. Sub-systems are then refined by describing detailed activities, inputs and outputs are identified, boundaries are drawn to identify limits of control, and measures of performance and decision processes are added. The construction of models of interrelated system and sub-systems may usefully be enhanced by the use of various creative problem-solving techniques for idea generation and evaluation such as those described by Van Grundy (1988)[7] as well as alternative futures techniques for building consensual images of a preferred future scenario (Fletcher, 1979; Padbury, 1985; Textor *et al.*, 1984). The public representations may be created such that they are similar to the rich picture (see Stage 5, below) or by using another format that is accessible to all involved. The outcome of this stage is one, or preferably more, models which then become the inputs for the next stage.

As problem solving, Stages 3 and 4 are subject to the threats of oversimplification, and assumptions in the generation of root definitions and in describing improved situations, there are the possible traps outlined by Brody (1982) regarding "solutions": applying standardized improvements, grandiose solutions, palliatives, or limited solutions. There is a particular danger, in using systems thinking, of over-rationalizing the models of the improved situation. The purpose of

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[6]See Anderson & Carter (1990) and Egan (1979) for applications to social systems. Anderson & Carter describe the properties of systems in terms of structural characteristics—boundary and linkage, hierarchy and autonomy, differentiation and specialization—and behavioral aspects—control (power), communication, and adaptation.

[7]Van Grundy (1988) provides a considerable number (61) of possible techniques for "generating ideas", many of which are variations based on brainstorming, and another 16 techniques for evaluating and selecting ideas for problem solving. Among what the author describes as "eclectic techniques" relevant choices could include Nominal Group Technique, and Decision Seminar which incorporates some of the principles and techniques of SSM.

Stage 5, however, is to counter such threats through various comparisons with other models, the description of the problem situation and reality (see below). Otherwise, as in most problem-solving models but especially in SSM, there is a recognition that reiteration of the complete cycle progressively addresses such threats. Participation in Stage 3 and 4 raises a question of the sophistication of the techniques being used. While in Stages 1 and 2 there were opportunities to engage relatively large numbers and a wide range of people, starting with Stages 3 and 4 there is a tendency to include smaller numbers of representatives. This is an inherent need as the techniques used are difficult to use on a large scale. The facilitators-organizers of the process need to take note of the transition from Stage 2 to Stage 3 in terms of the various *Ws* that were identified in Stage 2. There is also a check on overlooking interests among those involved in the problem situation though the use of the CATWOE mnemonic to recognize those who may not be participating but who must be considered.

Stages 5: Comparing

Stage Five marks a re-entry into the real situation and entails comparisons of the conceptual systems models created in Stage 4 with the description of reality created in Stage 2. This is, in essence, an identification of the gaps between what has been described as the existing problem situation and the conceptual models of an improved situation as suggested by systems thinking. An additional purpose of this stage is to check the conceptual models against reality in order to refine them accordingly and to indicate a possible need for further data collection. The expected outcome of Stage Five is an agenda for debate of desirable and feasible change in the situation, which takes place in Stage 6.

The comparison may be undertaken using a number of techniques, or their possible combinations, including: general discussion, question generation, overlay, and historical reconstruction. In general discussion, fundamental issues are raised

based on the differences found between the conceptual models and the problem situation. This is primarily used to check the conceptual model for its fit and with reality. Overlay, is used if the problem is primarily organizational-structural where the conceptual model can be made to graphically resemble the picture of the problem situation, involves a direct comparison of these two similar images to identify areas where they are not matched, as a focus for discussion. Historical reconstruction helps to examine the origins of current problem situations and entails the comparison of a reconstructed past (often entailing a case study of a particular project) with conceptual models. It should be noted that this particular technique has some participatory/managerial caveats which are discussed below. Some problem-solving techniques are specifically designed to circumvent conflict, for example, those such as Brainwriting which are designed to provide anonymity (Van Grundy, 1988, pp. 73-75) In negotiation (Fisher and Ury, 1981), which uses similar techniques in a comparable sequence to SSM, inter-personal communication and group process techniques are employed to attempt to resolve such conflicts. Thus, in these stages as participants with differing viewpoints increasingly interact in making decisions, internal process management styles should be considered.

Stage 5 serves to check several of the threats to problem solving that were described above. In Stages Three and Four, building conceptual models, abstract conceptualization and reflective observation are primarily involved and Stage Five, by comparing abstract concepts with concrete experiences, is a means of resolving the dialectic of prehension. Issues of participation and management continue to be important for the reasons described above but, during Stage Five, an additional consideration is the potential for conflict that may arise from, for example, critical identification of individuals' roles and responsibilities in historical reconstruction, or from the confrontation of differing viewpoints. Techniques must be chosen accordingly or a facilitator must be able to act as a mediator if the conflict is regarded as a positive part of the process.

Stage 6: Debating Change

Stage Six is concerned with identifying changes that could be implemented in order to improve the problem situation, changes which are both desirable and feasible. Desirable changes are those which are consistent with the interests and concerns of those involved, while feasible changes are those which which can account for available resources and other limitations on action. Improvements might include changes in: structure, processes, policies, or attitudes. Considering the various viewpoints of those involved, it would be necessary to arrive at consensus on what is desirable and feasible. This implies that debate—including negotiation or, if there is frank conflict, mediation or arbitration—would be involved. This debate should involve the owners, actors, and customers of the system and may take place in a number of arenas: from small ad hoc groups, to formal organizational settings, to courts.

The suggested techniques for debate include those mentioned above for Stage Five, adapted to the purposes of debate, the team-building and communication-improvement techniques mentioned under Stage One, and Alternative Dispute Resolution (ADR) techniques for dealing with increasingly possible conflict during the debate stage (Amy, 1987; Fisher and Ury, 1981; Susskind and Cruikshank, 1987). Future studies aim to build consensus such that shared visions of future desired scenarios can be examined to determine the necessary transformations processes. This approach uses the more imaginative of the creative problem-solving techniques such as Creative Visualization and Free Association (Van Grundy, 1988). Imagination is considered necessary to help counteract against tendencies to repeat familiar but counterproductive strategies. ADR uses a process which is generally comparable to SSM, especially regarding the focus on the elaboration of differing viewpoints and the techniques of communication-improvement in order resolve conflicts. The philosophy of more recent approaches emphasizes a shift from win-

lose to win-win strategies which aim to provide gains for all involved thereby enhancing sustainability and equity.

Stage 6, like Stage 5, involves checking proposed changes for realism and appropriateness; in this case for projected activities. The principal criteria for appropriateness are feasibility and desirability. The former is similar to the criteria for testing solutions in problem solving, but the latter is a consideration that is frequently overlooked in problem-solving models that assume the desirability of a logically-tested solution. As experiential learning, Stage 6 involves convergent learning, a combination of abstract concepts and active experimentation. However, with increasing need for participation by those involved and with more specific and concrete issues related to actual changes, there is a need for a broader range of learning capacities. This also suggests a need for a wider range of managerial skills. By Stage 6, and increasingly in the next stage, there is a culmination of capacities that have been progressively built up during the earlier stages. This anticipates the ultimate form of SSM usage which is a free movement between stages and, therefore, holistic usage of the requisite learning and managerial capacities.

Stage 7: Planning and Implementing

Stage Seven entails the detailed planning and implementation of agreed changes in ways that are congruent with and a continuation of the previous stages. During the undertaking of the first six stages of the methodology the researcher has undertaken to build effective working relationships among those participating in the research and also to create both descriptions of reality which faithfully reflect their concerns as well as conceptual models that enable them to test possibilities of improvement regarding these issues of concern. By the sixth stage, there should be agreement on desirable and feasible changes. The planning and implementing of

these actions may be undertaken using any of a wide range of possible ways, however, they should be consistent with the philosophy, methodology and the techniques used in other stages. Additionally, they should minimally contain the following components: key activities, measures of performance, those responsible, time frame, identification of resources and budget, leadership responsibilities, and the means for and contents of communication (Wilson and Morren, 1990).

In problem-solving models, as noted above, implementation does not receive adequate attention with regards to its relationship to the whole; it is regarded as part of the existing situation into which solutions designed through problem solving can be inserted to await outcomes that may be recycled. Checkland does give some, if not equal attention to the implementation phase and his suggestion that SSM can eventually be a process of moving freely through all stages along with implementation to check the validity of outputs of particular stages integrates implementation well into the process. Wilson and Morren (1990) further elaborate how the techniques of implementation are related to those of the earlier stages. The necessity for this integration is suggested by Kolb's experiential learning model which places implementation in the accommodation quadrant involving both concrete experience and active experimentation, thus completing the learning cycle by providing the inputs, as suggested by all problem-solving models, for reiteration. Management issue now come to the fore as the focus is not so much on particularities of specific research activities but rather the management of improvement activities in its entirety as it exists in the problem situation.

An important consideration at this point also is the question of how the process could continue. SSM is essentially a progressive cooperative learning and situation-improvement process undertaken through reiteration. It is very unlikely that complex, ill-structured problems would be solved or even significantly improved within one cycle and a one-shot application is antithetical to its

philosophical basis as a learning process. The goal of applying SSM, especially in a community development context, should be to transfer the methodology from the research context to the situation context which is long-term if not permanent.

CHAPTER 4:

PROCESS, OUTCOMES AND DISCUSSION

All theorizing is flight. We must be ruled by the situation itself and this is unutterably particular. Indeed it is something to which we can never get close enough, however hard we may try as it were to crawl under the net.

Iris Murdoch, **Under the Net**

STAGE ONE: Entering and Inquiring into the Problem Situation

Entering into the situation involved two main elements: (1) training of the research team and (2) making initial contacts with those who were expected to be involved and those who must formally be informed of the project. The training consisted of three main didactic sessions and a number of informal discussions. The initiation of contacts with the selected District entailed two visits to the District Health Center (DHC), Krok Phra District, for the purposes of introducing the project and for selecting the two *Tambol*, and two visits to each selected *Tambol* for the purposes of introducing the project and selecting the villages. Formal letters were sent to the Governor's Office, the Provincial Chief Medical Office, and the Krok Phra District Health Officer (DHO).

Inquiring into the situation entailed an open-minded study of community-based problem solving in Krok Phra District. Over a three-month period the research team made a series of visits to the selected research sites for the collection of information by accessing existing records, observing activities, and conducting interviews and discussions with those involved in the problem situation. Data was recorded in field notes, on audio tape, and on video and slide film. The team met after each visit for discussion and data processing.

Introducing the Methodology

The first introductory training session was held during 17-21 December 1990. The session was held at the Central Regional Training Center (CRTC) in Cholburi as a joint session for this research team and two others whose projects were being initiated at the same time. There was considerable interest in Participatory Action Research (PAR) among those involved within the Office of Primary Health Care (OPHC) and the Faculty of Public Health, Mahidol University, and it was decided to conduct this joint session to orient all three teams to PAR and to its respective project.[1] While the Northern RTC (NRTC) team was undertaking PAR, the other teams were considering the possibility of using PAR techniques in their projects. Attending were advisors and facilitators including: Dr. Somsong Rugpao, Director, OPHC; Mr. Ong-Art Sitthicharoenchai, Chief, Technical Section, OPHC; Mr. Chanin Charoenkul and Dr. Nirat Imamee, Faculty of Public Health, Mahidol University, and myself (the respective project consultants); and Mr. Thavisak Svetsreni, a lecturer at the Institute for Population and Social Research , Mahidol University. The participants were the members of the three research team. The aims of the session were to:

1. introduce the research teams to PAR methodologies and techniques;
2. initiate the development of team-building, communication and problem-solving skills among the research team members; and,
3. introduce the respective research projects.

The objectives of the training were to introduce the concept of PAR and to initiate the development of skills in team building, communication, and problem solving. The learning techniques were discussions, small group discussions, role play, and

[1]The other two research projects were: (1) "The Role of Women in Community Health Development in a Rapidly Industrializing Area" conducted by the CRTC, and (2) "Evaluation of the Adoption and Absorption of Non-communicable and Communicable Disease Control Measures by Communities in Thailand" conducted by the OPHC.

lectures. As it was a combined group of research teams, there was little emphasis placed on detailed aspects of the specific projects.

The second training activity, again involving the three research teams, was conducted at the NRTC during 21-23 January 1991. The objectives of this session were to develop skills in qualitative research techniques with special emphasis on long/in-depth interviews and focus group discussions. Most of the participants had a Bachelor degree in the field of public health and all had experience in research. However, their experiences were primarily in basic science methodologies using quantitative research techniques and, therefore, this session was intended to provide them with the opportunity to develop their skills in the techniques that would be used extensively in PAR. This session was conducted by Mr. Thavisak Svetsreni as an intensive experiential training course.

The first day was devoted to lectures on data collection techniques. The second day was spent in a village in Krok Phra District (not in a *Tambol* involved in the research project) conducting interviews and focus group discussions on an ad hoc basis. The last day was an opportunity to synthesize the findings of the field experience and to prepare a report of the outcomes. The objectives of the field study were to learn about the villagers' views on: (1) the history of the development of their quality of life, basic, needs and public health; (2) community participation in development; (3) the future of village quality of life in ten year's time; and (4) the use of information for the he development of their families and community. The results of this study were published as an informal research paper.[2] This was the last session of joint training.

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[2]Office of Primary Health Care. (1991). A Qualitative Study of the Role of the Community in Quality of Life Development, Dongsaphlu Village, Tambol Bangmaboh, Krok Phra District, Nakhon Sawan (Sumit Hemasathorn, Trans.). Bangkok: Ministry of Public Health.

The third training session for the NRTC team only was again conducted by Mr. Thavisak Svetsreni at the NRTC during 11-13 February 1991 as an initial planning session for the project. The session was planned and initiated by the team who invited Mr. Thavisak as well as the Director of the OPHC (who attended briefly on the last day). Mr. Thavisak set the objective to develop a plan of action for the research project. The research team was assigned the task to outline an action plan including their objectives, targets, results, strategies, and methods. After some confusion over the terminology, they were able to complete such an action plan. Their plan, however, was anticipating possible outcomes of the research; it was a plan to train district and sub-district health officers, and villagers in problem-solving techniques. The resultant Strategic Plan, therefore, was not adhered to in implementation. Another specific outcome was the delineation of roles and responsibilities of those involved (see Appendix C).

The final session before entering the situation was held during 21-22 February 1991 with the main objectives, first, to create an understanding of the research process among all those involved and, second, to begin entering the situation by informing and securing cooperation from those involved in the situation. The first objective, to create understanding, arose from the confusion during the previous session. Discussion were held to this end among the Director, the research team, and myself. The team was given a series of handouts which outlined the main objectives and principal outputs of each stage of the SSM process see Appendix D). Primarily, however, the group was given an verbal overview in English and then was given an opportunity to discuss the inputs as a group. At the same time, the research team undertook a literature search to locate any material that would contribute to their understanding. They found very little available, especially in Thai. The latter objective was achieved by sending formal letters to the Governor's Office, the Provincial Chief Medical Office, and to the District Health Officer of Krok Phra

District who was also contacted directly by telephone to make an appointment to discuss the research.

The data collection guidelines were also prepared at this time (see Appendix E). Outlines were given to the team which described the types of information that should be included. The general focus of inquiry was the means by which the THCs and the communities solved problems, separately and in collaboration. The specific areas on inquiry were: the problems experienced, development (problem-solving) activities, how they were undertaken, what structures and processes were involved, outcomes, and the viewpoints on difficulties and possibilities for improvement. Emphasis was placed on the need to record both data and process notes that reported their own observations, feelings, and questions about the research process. The team prepared data recording procedures and a system for maintaining field and file (collated) notes of collected information. It was decided that the process of conducting the research would be recorded on video and slide film—being as unobtrusive as possible—and on audio tape as well as by mind-mapping for later transcription[3]. A corner of one meeting room in the Center was set aside as a "Krok Phra Corner" where various information could be collected.

Entering the Situation

During 4-8 March 1991 the team prepared for site selection. Guidelines for site selection (*Tambol* and villages) were prepared. As mentioned, the District had already been selected and initial agreement received from the DHO. It was decided that a manageable number of locations to study within the District would be two THCs and a total of four villages, two for each THC. We wanted to allow the DHO a major part in selecting the THCs in order to engage him directly in the research, and

[3]The intention was to prepare both reports and teaching-learning material from the video and still photography at the end of the project.

our criterion was simply that they would be recommended by the DHO; more specifically, that they should be sites where he felt such research would be feasible and beneficial. Concerning the selection of villages, we wanted for the same reasons to involve the THC in selecting villages. More specific criteria were set as guidelines for the THWs to suggest villages. However, the research team would make a final selection. These main criteria were that the villages, as a group of four, should have variety and difficulties in solving development problem. Specifically, it was decided that the villages should be variable in terms of: (1) their distance form the THC, (2) the quality of their governing organization, (3) and their levels of development, as described by the THWs.

The team reported specific problems in their reaching agreement on the objectives and scope of the areas for inquiry and the extent to which the information collection would be conducted at the village level; if it would include only village leaders and Village Health Workers (VHWs), or householders as well. At first, we decided on broader coverage including householders (see below). They also reported that they felt that there were difficulties in achieving a common understanding about the research among the advisors, consultant, Principal Investigator, and the team.

During 4-8 March, the team also made the first visit to the DHC. We found that, contrary to our expectations, the District Health Officer (DHO) had reservations about the research as his previous office had incurred considerable expense in a previous, similar university research project. It was emphasized that this was an internal Ministry project and that that expenses would only be those from the regular Ministry budget. Once these issues were clarified, the DHO expressed interest in the project as he had himself wanted to reorganize the management of the District Health Office. My role was described as that of a graduate-student observer of PHC services in Thailand so as to forestall any expectations that this was a project with

special funding or inputs. His objections were not serious and full agreement was received after some clarifications.

Through consultation, two THCs were selected by the DHO. He appeared to understand our wish to study those THCs that were not "ideal" but rather those where there would be potential benefits from the involvement in this research. He eliminated some on the basis that they would not be able to provide adequate cooperation due to manpower shortages and some because he thought that their problems might be unmanageable. The team deferred to his suggestions, and *Tambol* X and *Tambol* Y were selected.

We were taken directly by the DHO to visit the two selected THCs in order to introduce the project and to select the target villages. The response to our criteria for villages at both THCs was that most villages were about the same but, on further discussion, we found that there were villages where decision making, problem solving, and/or cooperation in MoPH projects was problematic. However, there was some reluctance on the part of the THWs to select these villages. It had been my observation that villages selected for research or demonstration projects in similar situations were often "model villages". Our request may have seemed unusual and possibly threatening if they thought that the results could reflect negatively on them. There was also some uncertainty among the research team about the criteria and it was decided to postpone the selection until the next visit.

On the second visit to the THCs, village selection was finalized. In *Tambol* X, where there are a total of six villages, the team selected Village A which is close to the THC and was reported to have good community cooperation and participation, and Village B which is at some distance from the THC and was reported to have a weak Village Headman and poor community participation. The THWs also reported that Village B was uncooperative in completing a latrine construction project. In *Tambol*

Y, where there are a total of seven villages, there was reportedly not as clear a distinction between levels of village organization, and so, observation of general conditions and data on levels of socio-economic development were used as selection criteria. The villages selected were Villages C, which had poor socio-economic development, and Village D which appeared to have considerable economic disparity within the community. At this time, requests were made for access to THC records on the identified villages. The research team was then accompanied to the villages by the THWs and introduced to the respective Village Headmen to explain the research project, to secure their cooperation, and to determine convenient times for future visits.

Inquiring into the Situation

From the latter part of March through to the middle of August but especially during late May and June, the two research groups—Group A (*Tambol* X) and Group B (*Tambol* Y)—made repeated visits for data collection to the DHC, and their respective THC and villages. At the DHC, the combined research team conducted long interviews with the six officers and pertinent records were accessed. Subsequent visits were made to clarify any points that later arose. Team members also observed a meeting for *Kamnan* conducted by the District Officer (Ministry of Interior). At the THCs, both long interviews and focus group discussions were conducted with the THWs on a number of occasions. Team members attended *Tambol* Council meetings as observers and were able to interview some of the members following the meetings (an Assistant District Officer, government officers who were members of the *Tambol* Council Supporting Committee (TCSC), the *Kamnan*, Village Headmen and some members of respective Village Committees). An observation was also made of the completion of the BMN Form 3—the village summary including information from the TCSC officers. Team members observed a voluntary tree-planting project, organized by the District Office along a newly-opened section of road, which included

villagers from Village B, *Tambol* X. They also participated in the *Songkran* (Thai New Year) festival, when elders are honored, in their respective study villages.

Specific community members were identified for interviews: community leaders including members of the Village Committee (VC), village health workers, and other community leaders. If these targeted individuals were not available , fellow household members or near neighbors were asked about the best time to return and appointments were made. Ordinary villagers were interviewed at their homes, at first, in a "random" fashion, i.e., the researchers scattered throughout the village and approached houses without any predetermined selection. It was understood that this was not a representative sampling. However, the intention was to engage people in in-depth interviews so as to identify topics for further consideration and to identify informal leaders of the communities.

Two conclusions resulted from these attempts: first, villagers were not very forthcoming in their responses to interviewing, providing very little information, and second, an excessive amount of time was involved. A decision was made to concentrate on Village Committee members, VHWs and identified informal leaders (e.g., former Headman, community group leaders, etc.) as representatives of the village with an understanding of the limitation this imposed on the information received and with a commitment to address this issue later among the team and co-researchers (DHC officers and THWs). Also, focus group discussions were later conducted with groups of villagers following monthly village meetings. The data collected was, for the most part, recorded in longhand in files from the audio tape recordings or field notes. As mentioned, however, the use of mind-mapping and similar dendogram techniques were used increasingly during the research. Hence, the technique was used for both recording and summarizing purposes, but not by all team members all of the time.

The team reported a number of difficulties in undertaking the information collection. The main problem was one of time, both in terms of their own availability considering their other responsibilities, and in terms of the time required for the techniques being used. Specific mention was made of the lack of processing and synthesizing of data following field visits, mainly due to the lack of time. Related to this was the problem of the lack of availability of the co-researchers, especially the DHC officers. Another reported problem was that the guidelines for inquiry needed adjustment to make them more appropriate, specifically that the subject areas for data collection were not clear enough. There were also apparent limits to the information that was considered by the research team to be appropriate. The team learned that Village B, *Tambol* X, had become involved in a dispute with a adjacent village in another *Tambol* over the use of public land. To my suggestion that they investigate this situation to learn about the manner and capacity of the community to resolve local conflicts, they responded that any direct involvement in such a situation might jeopardize their acceptance by the community.

There did appear to be some caution during interviews—especially among formal leaders when discussing their roles—in responding to questions. The various recording devices were explained and used unobtrusively (for example, video recording briefly with a zoom lens from a distance of several meters) and, thus, did not appear to constrain the interviews/discussions. Conducting in-depth interviews with privacy was found to be difficult. In many instances it would have been difficult to isolate a person for such a purpose, to the extent that cooperation may not have been forthcoming. This was especially true with the villagers. It was also observed that the team members did not readily adopt mind-mapping as a recording technique. However, a Thai translation of Buzan's book on the technique of mind mapping (Buzan, 1983) was found, after which one member of the team used the

technique extensively while the others modified their note-taking styles to varying extents accordingly.

Discussion

The process of preparing the research associates (research team) was one of a series of training surrounded by confusion about the overall process. The didactic sessions introduced the methodology; described the basics of communication, team building, and communication; and provided training in qualitative research techniques. A further small-group exercise was held for planning the research process. Following these sessions, the transfer of the SSM technology as undertaken through informal discussions and group work. The didactic sessions were organized in a manner that was familiar to those participating, although it should be noted that non-formal, active-learning techniques such as role play, small-group work, and field work were used extensively. The training in qualitative research techniques is a particularly good example of an effective combination of concepts, application and reflection. However, this training was also a contribution to the overall confusion about the methodology that was being applied.

There was neither experience nor relevant material available to provide an adequately clear basis for dealing with the significant differences between the philosophy and methodology of SSM and those with which the team members, and others, were familiar. It was, in its most messy manner, a process of learning-by-doing that was further complicated by language problems and issues of roles. In this situation, the inputs by various advisors who had different viewpoints and understandings about the research process complicated the situation. Their roles with respect to the research associates—those of superior, teacher, elder—as compared with mine—a combination of consultant, student, foreigner—made the situation all the messier. Following the series of initial trainings, the process was

simplified, if not necessarily made more effective, by reducing the number of people making inputs. However, the process was not as structured or well organized as it could have had there been a clearer vision of what should be involved in the training for SSM. Reflection on the issues which have arisen, experience has provided the needed clarity to greatly enable the development of a more relevant and appropriate training process to support the research process.

The introduction of the project was undertaken through the normal procedures for Ministry activities. There appeared to be no difficulties of acceptance, however, this approach must be considered as a part of the problem situation. Of significance are the relations between the different levels—NRTC, DHC, THC, village—and how these relations affect the problem-solving process. A particular issue is the step-wise approach to training where the opportunity was not taken to include all levels together. There would appear to be a number of advantages to such an approach given the experience of this project. The outcomes suggested that one of the possible main constraints on the BMN approach was a lack of understanding and interest which may well be due to the lack of adequate or appropriate training, especially in the long term. It would be worth exploring the possibility that part of an improved training for application of the methodology could include joint exercises among all concerned.

The techniques for inquiry—interview and focus group discussion—appeared to fit well with the normal style of interaction among government officers and between government officers and the community. While the use of these techniques may have deviated from the strict rules for their application, the comfort of those involved was also a consideration. For example, although interviews should be conducted in private to encourage frank responses to questions, this was not only difficult to arrange but it was felt that many would be uncomfortable with a request to talk in private, especially in a community setting. They, and others, may wonder about the

apparent secrecy. In reality these interviews were usually conducted with others nearby and often they would make their own contributions. It would have been possible, as the research progressed, to make arrangements for a truly private interview if warranted but such conformity to the formal procedures at the initial stages was thought to be counterproductive. Similarly, focus groups discussions were often conducted in as relaxed a
manner as possible. The decision to restrict the coverage of householders during interviews needs consideration. It was not possible for the NRTC team to conduct such an in-depth coverage but it is especially important that this neglect be rectified both for the validity of the research and to fit with the philosophy of the BMN program. Possible modifications of the training where all are involved jointly could offer a means for others, for example the THWs, to undertake this effort.

STAGE 2: Summarizing the Situation

The inquiries into the situation were completed in the middle of August 1991. While it was felt that the past three months of activities were an adequate basis for continuing onto the next stages, it was also a time when all of those involved were unavailable for research. The Seventh National Five-Year Economic and Social Development Plan (1992-96) began on 1 October 1991. The period immediately preceding this date was a time when government officers were preparing summary reports on the completion of the Sixth Five-Year Plan and making preparations for the next plan. The summary of the information collected was prepared during the period from the middle of August until the next meetings for the project in mid-October.

The summary of the situation was prepared as a written report (see Appendix F for translated version[4]). The need for verifying information with the co-researchers was stressed to the team, especially as primary task and concern themes were identified. They were encouraged to discuss their findings as a group and to use cartooning, or a similar technique, to prepare a rich picture of the information to help develop their themes. Examples of rich pictures were provided from Naughton (1984) and I prepared one as an example using their summarized data. They were again reminded to keep notes on the process as well as the content of the research.

The summary was prepared as a group effort, but with individual members assigned to complete specific sections separately for compilation. While some informal verification may have taken place during the repeated visits to the DHC and THCs, the summary was not provided for possible discussion with the co-researchers until the next meeting of the team with the co-researchers in October 1991 which was held to undertake Stages 3-6. At this time the completed report was discussed in small groups as a basis for the continuing process. The research team facilitated discussions to identify areas of concern, viewpoints and opinions concerning the work of the THCs, and their working relationships with the DHC and the improvements. In this description and discussion of the findings, the areas relating to problem solving are emphasized.

The description of the problem situation was summarized by level as follows: (1) DHC, (2) THC, *Tambol* X, (3) Villages A and B, (4) THC, *Tambol* Y, (5) Villages C and D. This information is for the most part highly summarized. The description of the DHC was relatively limited, as the focus of problem solving is at the interface between the THC and the village. The first report was even more limited but, after requesting that additional information be included, this was expanded. However,

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[4]Translated by Chanin Charoenkul, Faculty of Public Health, Mahidol University.

there was still a lack of depth at this stage. The report very generally described the DHC location, responsibilities, and activities. As the research continued into later stages, the DHC was more involved, but sill it was relatively peripheral as the focus remained on the THCs and villages.

Tambol X

The description of the situation of THC, *Tambol* X by the three *Tambol* Health Workers (THWs) included primarily the structures and processes of their work, but it also delved into how they viewed their working relationship with the study villages and touched on their working relationship with other sectors. There was, however, no mention of their relationship with the DHC. They work individually, with each responsible for their own villages or activities. The THWs reported that they did not initiate many activities on their own and mostly undertook required tasks. They also appeared to have relatively formal relations with villagers as suggested by their infrequent visits, and their tendency to visit in the company of authorities.

Regarding the use of BMN, the THWs described a cursory effort to complete the required data collection and analysis, and described the indicators as not very reliable or useful. They suggested that the main problem was a lack of understanding about BMN and a lack of engagement in performing the surveys. There was some discussion on how, in terms of their various working relationships, the situation could be improved. This did include consideration of the DHC. The main need for improvement was cooperation in all working relationships. These improvements were, however, fairly general and did not explore some of the issues of how improvements could be made or who should be responsible. They did, however, indicate a need for more support from the DHC, especially in terms of finance, help with problem solving, and supervision.

The THWs felt that Village A had fairly effective leadership and cooperation. However, temporary migration and a lack of interest affected health projects. Village B was described as having poor leadership and less cooperation among the residents.These problems were exacerbated by poverty and a dispersed community. The THWs also indicated the need for better village organization including an understanding among Village Committee members about their roles. There wàs a particular problem in completing a latrine-construction project in Village B. Both villages had problems of communication and low productivity.

The situations of Villages A and B were portrayed in terms of their physical and social structures and characteristics as well as in terms of their problems as perceived by the householders and leaders. Special note is made here of the participation in village development and the difficulties experienced. In Village A, there appeared to be a well-organized Village Committee with a number of specific roles given to its members, although some were difficult to fill. Villagers had been involved in both self-managed and government-sponsored projects. A number of community organizations and funds were listed and they appeared to be viable concerns. There are also eight (Village Heath VHWs) who had a number of specific tasks. However, it was noted that, while there is good cooperation, involvement in decision making on development issues is somewhat restricted to the Village Committee (VC) and there appears to be a general lack of understanding about the BMN process. In completing the annual survey, only the THWs and Village Health Volunteers are involved, not VC members or officers from other sectors.

Village B was described as a village which was experiencing a number of social problems: conflicts, participation in decision making, and communication. The VC had fewer specific roles and rarely met. There was also conflicts between groups within the village. Governance was mentioned as a particularly serious problem. There are five VHWs but there tasks were not as clearly specified and it was reported

that their main activity was conducting the BMN survey. However, while BMN survey coverage had achieved 100%, it was reported that the information was not used at the village level. Generally, there was a lack of understanding about the BMN process. This was adversely affected by the poor communications. Village B also had problems with both domestic and agricultural water supply, and productivity. .

Tambol Y

The THC of *Tambol* Y was also described in terms of the structures and working processes of the THC team. While one of the THWs had a relatively limited role, the teamwork appeared to be good. Although the THWs had separate assignments, they were all aware of the others' responsibilities and cooperated with each other. The head of the THC was characterized as having a particularly effective relationship with villagers. It was reported that he had a good understanding of the people and how to work effectively with them. The THC was reported as having initiated some projects in cooperation with the villagers such as a nutrition project, a VHWs club, and an elderly group. In this part of the summary, there was no recording of the reported difficulties of the THC, their views of the villagers, their superiors, or colleagues in other sectors; or how the officers thought that their work could be improved.

Participation in Village C was described as particularly good but adversely affected by the economic challenges facing the people. There were a few community groups listed but there were reported problems in sustaining some of them due to the lack of continued support from government officers or to the lack of administrative skills among the villagers.It was noted that the forms of community participation were changing due to the development of a cash economy and worsening economic conditions. Volunteerism appeared to have been affected by the increasing need to attend to household interests, especially financial ones. A lack of water was cited as

one of the main problems but there was also criticism about the manner in which government officers assisted them. The people felt that government workers had a role to play in assisting village development, but that in terms of partnership rather than patronage. The reporting on BMN was summarized for both study villages in *Tambol* Y as described below.

Village D was portrayed as having some difficulties in undertaking participatory development activities and securing volunteer efforts. There were three community groups which appeared to be viable concerns, although maintaining involvement by the people was a problem. Members of the Village Committee gave the impression that those who were involved in voluntary activities should be able to take direction from the VC members. While there had been successful volunteer efforts on certain occasions—the King's Birthday, when supported by outside agencies, and when organized by a local Abbot, there was a particular problem in maintaining activities initiated by government officers. There was apparently some resentment by the villagers about the officers' approaches to development efforts. It was noted that there was a changing trend in the type of village projects from infrastructure development to human resource development. Economically-related problems were again quite significant. Problem solving through the use of BMN was characterized as a common situation in both villages. There appears to be some success in undertaking the annual survey but deficiencies in understanding among the VC and the villagers about the overall process and how the data could be used in problem solving.

Discussion

The preparation of the problem situation summary was undertaken by individual members of the team in the manner of a regular official report. The descriptions were presented in an outline form predominated by structures and

processes, with some limited references to climate, *Ws*, and concerns. One of the research groups (Group B, *Tambol* Y) included a considerable amount of interpretation in their report. There was no specific effort to do a primary task analysis. The report was presented as a static and, although modified once, final report of the inquiry. The complaint that the inquiry guidelines were too open is suggestive of an expectation that was contrary to the aim of the inquiry to be open and flexible in describing the problem situation.

There was a need for a more focussed and facilitated approach to the construction of a rich picture or some other means of publicly massaging the information. The team passively refused to adopt cartooning but the experience with mind mapping suggests that, with the proper introduction, these techniques may be accepted. Otherwise, if there was an objection other than reluctance to use a new technique, alternative techniques to use the information collected for dialogue/reflection purposes would have to be explored. Whether their judgement that the technique would be inappropriate for village-level use was correct would have to be determined. Again, it would be worth pursuing possibilities through joint training.

The outcomes of the inquiry were not as fully processed or analyzed for themes as was expected. It has been noted that the end of the second stage occurred at a time when there was considerable demands placed on all government officers because of the new five-year plan. This constraint was a continuing problem as the Seventh Plan contained a number of new programs for which the NRTC officers were responsible for introducing in the Northern Region. However, some further processing of the outcomes of Stage 2 took place during the session for undertaking Stages 3 to 6.

STAGES 3 AND 4: Describing an Improved Situation

In Stages 3 and 4, systems thinking is used to construct alternative definitions of human activity systems, which describe what people are doing in an improved situation. These alternatives are compared with reality in Stage 5 as a basis for reflecting on the possible changes that could be made in order to improve the problem situation. These possible changes are considered, in Stage 6, in terms of their desirability and feasibility. In this research, these activities were undertaken by the government officers as a single activity during a meeting and subsequently by the THWs in each village, again as a single activity .

Prior to phase of the research, informal discussions were held between the team members and myself to review the theoretical aspects and technical considerations of these stages.It was impressed upon the team members that this would be an opportunity to confirm the outcomes of Stage 1 as a starting point for discussions of improved scenarios.(human activity systems). Writing root definitions was not emphasized, given the reluctance on the team's part to attempt new techniques with the co-researchers. Rather, it was suggested that they name key activities upon which they could construct models of improved systems using systems thinking Guidelines were provided with examples from Naughton (1984). The team responded, however, that systems thinking would be too difficult or unacceptable for the co-researchers, and certainly for the villagers. Thus they were reluctant to use the guidelines provided. I allowed then the freedom to undertake the exercise as they saw fit.

During 15-16 October 1991, a meeting was held at the NRTC for the representatives of the health officers of the DHC, Krok Phra, and of the two THCs. They were: the Assistant DHO and the District PH Technical Officer; Mrs. D, THC Chief, and Mr. S., THW, Tambol X; Mr. N.,THC Chief, and Miss W., THW, Tambol Y;

and the six members of the Research Team. The DHO, Mr. Preecha, attended briefly for the introductory discussion but did not remain to participate in the subsequent activities. The objectives of the meeting were:

1. to seek agreement on the ideals for the THCs and the DHC;
2. to identify gaps between the actual and desirable scenarios;
3. to seek agreement on the objectives for improving the situation;
4. to provide information on the next stage of the project; and,
5. to conduct a general discussion.

Members attending were given files containing the summary description of the methodology and the summaries of the outputs of Stages One and Two. The focus in this exercise was on the THC. The process began in a plenary session with an introduction to the objectives, a review of the materials presented, and a discussion for clarification. For the first exercise, four small groups were formed consisting of: (1) DHWs, (2) THWs, Tambol X, (3) THWs, Tambol Y, and (4) members of the research team. Each group worked separately to described how they envisaged improved scenarios as follows: (1) the DHW group described how an improved THC should operate, (2) the two THW groups each described how the DHC should support a THC in an improved situation, and (3) the research team described their views of how improved situations would operate for both the DHC and THCs. Brainstorming[5] and general discussion were used to identify key issues and corresponding activities. The groups then rejoined in a plenary session to discuss their outcomes. The aim of this preliminary step was to generate inputs, which represented others' perspectives, for each of the health officer groups to use in their subsequent deliberations.

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[5]Brainstorming, in this context, does not imply the use of the classic brainstorming rules described as a problem-solving technique by Van Grundy (1981) but rather a collective listing of items by a group, usually written on whiteboard/newsprint. This is usually a process where suggestions from group members are carefully considered and evaluated as they are offered as distinct from the diphasic process of classic brainstorming which involves a free expression of ideas followed by an evaluation of the whole.

The outcomes of this exercise were presented in tabular form for the THC and DHC respectively. The first, representing the outcomes of the two THC groups along with those of the NRTC group, described the "ideals" for an improved THC which were organized in terms of: administration, academic matters, information systems, supervision, and coordination. The THC efforts described a mixture of problems, needs and improvements. These did not represent a basis for development of models as expected. The NRTC contribution does achieve a higher degree of coherence and can be seen as the basis for developing models of improved situations. The second, representing the outcomes of the DHC group and the NRTC were described in terms of: administration, work of THCs, and work in support of village development. The DHC outcomes were a mixture of characteristics and activities, closer to the expected basis for model development. Again, the NRTC outcomes were also activity oriented.

In the second small group session, the research team members acted as facilitators for the three groups of health officers (DHC, THC X, and THC Y). Using the preliminary outcomes, each of the three groups described and listed elements of a desirable scenario for their own respective working situation. They again used brainstorming and general discussion to formulate and then categorize these elements. Dendograms were used by the facilitators as a means of recording the the process but in a unilinear manner. The groups met in a plenary session to discuss the outcomes. In this session, the two THW-group outputs were integrated into one standard version.

Figure 4.1 describes the ideal formulated for the DHC. The ideals were first described in a list form and then arranged in groups as a dendogram. The model has an overall philosophy—consider the needs of the villagers as the first point of any activity—and divisions of the desired characteristics of the DHC work situation according to: supervision, collaboration, administration, information, and technical. The areas that specifically refer to support for THC problem solving are

Figure 4.1 Ideal District Health Center

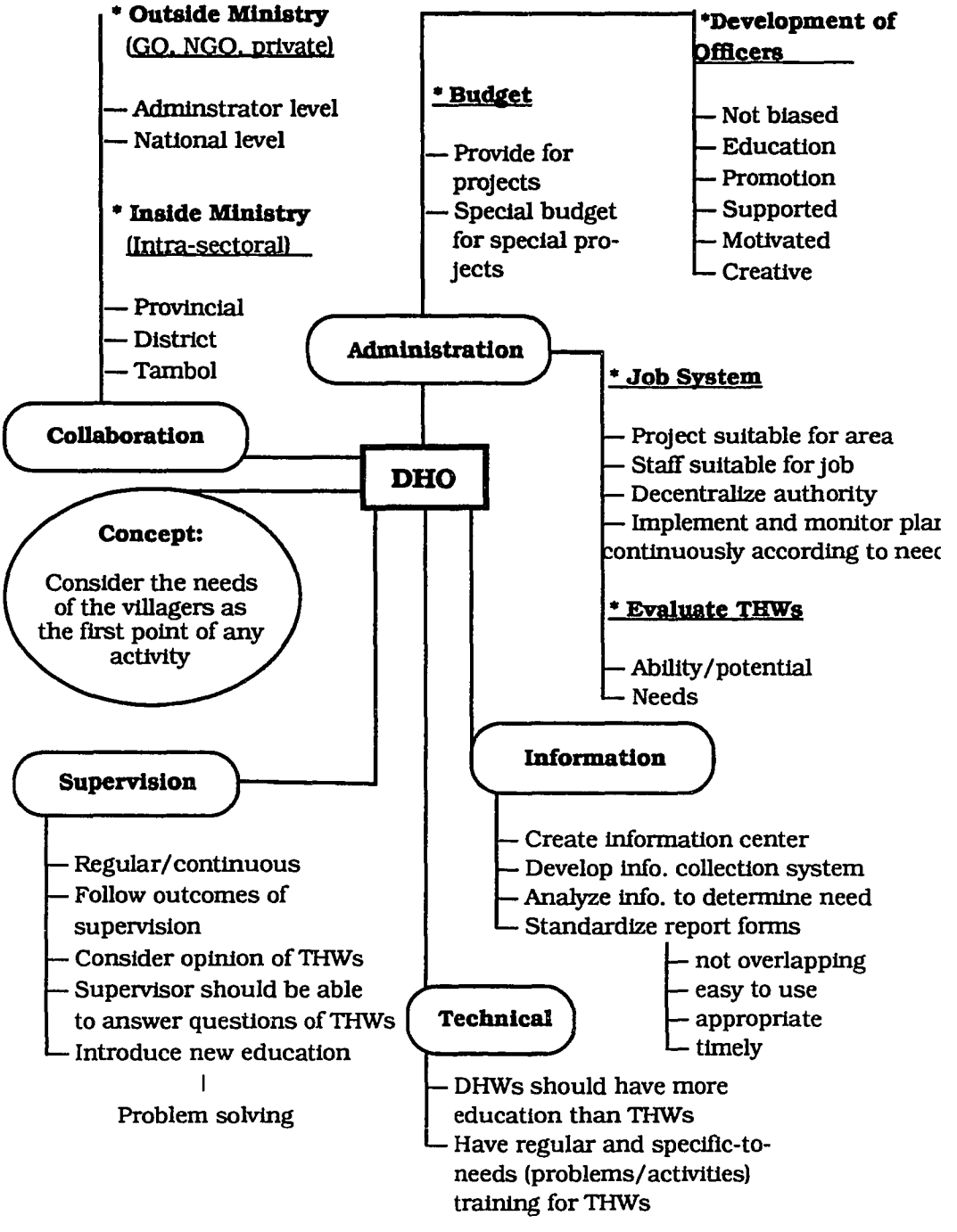
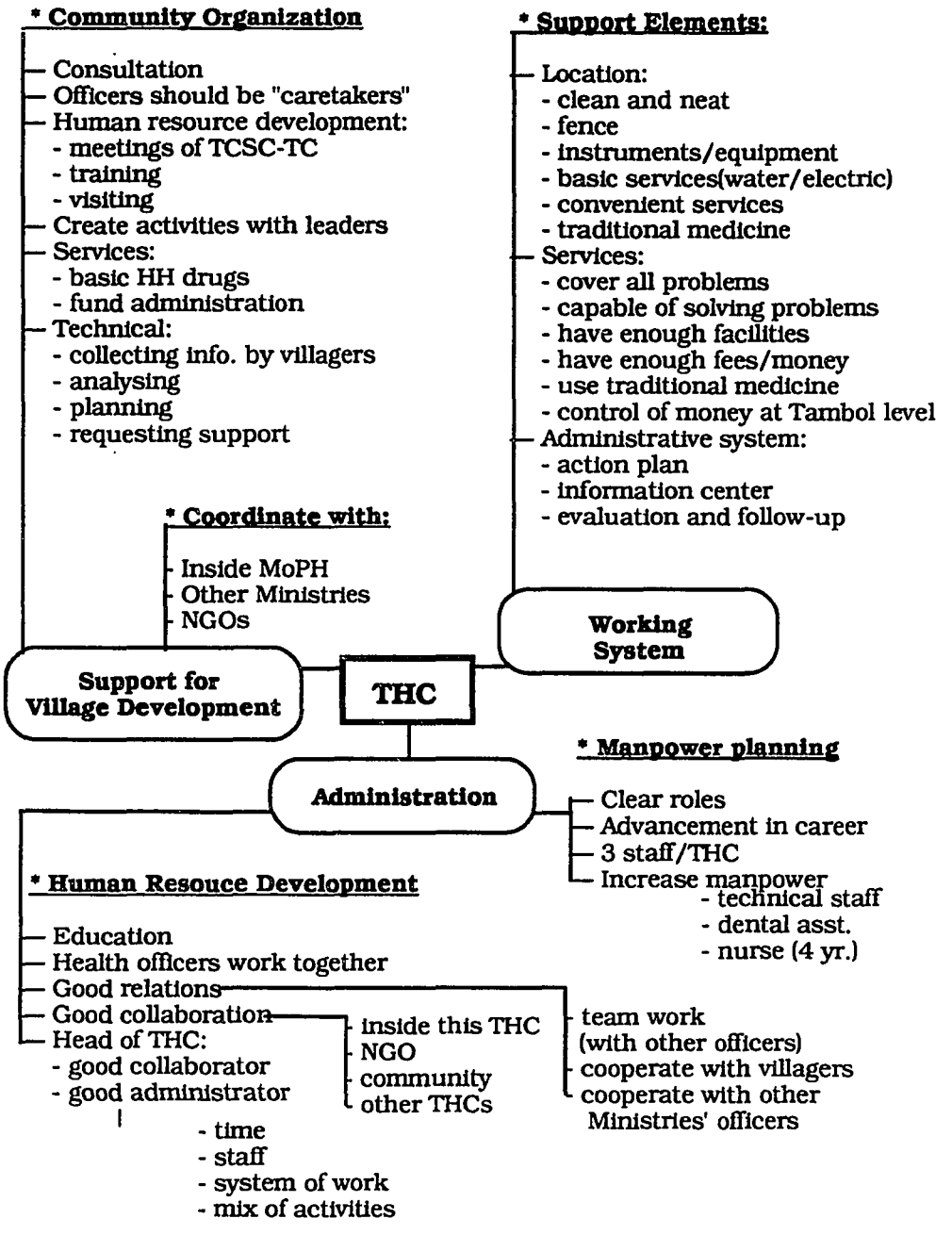


Figure 4.2 Ideal Tambol Health Center (Combined version)



found under *supervision* (introduce new education for problem solving), *technical* (regular and specific-to-needs training), *information* (develop and analyze information to determine needs) and *administration of job system* (implement and monitor continuously according to need). This format, however, is essentially the same as an outline. Systems thinking to consider inputs and outputs, boundaries, informations/resource flows was not applied to the models.

Figure 4.2 describes the combined ideals of the two THCs. The three main divisions were: administration, support for village development, and working system. There was a wider scope for community problem solving because of the more direct interaction between the THWs and the villages. Areas which were particularly relevant were: "support for village development", and services that "cover all problems" and that are "capable of solving problems". Many of the other identified ideal characteristics are directly supportive of improvements in problem solving, such as elements under *human resource development* that stress the need for cooperation in all working relationships, and decentralization, as suggested by greater fiscal control at the THC level. As already noted, there was a lack of direct reference of the relationship with the District level in the THC model.

Discussion

In the Soft System Methodology, Stages 3 and 4 are undertaken as an exercise that is removed from reality in order to facilitate creative, future oriented thinking, and to reduce the threat of assumptions. A link with the problem situation under study is provided by the issue-based and primary tasks themes developed in Stage 2. In this study, deviation from SSM can be seen at this point where such themes were not clearly identified and analyzed, and in the passive refusal to adopt systems thinking, during Stages 3 and 4. The approach adopted was grounded more in problem-solving models in that the output of this exercise was the definition of gaps

between ideal and real. There was a continued use of discussion and brainstorming as means for undertaking these tasks.

The description of ideals was undertaken in two steps, the first being a technique devised by the research team where the DHC and THC groups were encouraged to describe the roles played by the corresponding units—DHC describing the roles of the THC and THCs describing the roles of the DHC. This was an innovative means for encouraging the officers involved to adopt a new perspective on the issues under consideration and to exchange views between the DHC and THC levels. However, there was only a minimal development of models of an improved situation, ones that listed characteristics without any exploration of relationships between factors or of the systemic nature of the proposed changes. There was only consideration of the *what's* rather than the *how's*, *who's*, and so forth, of the improved situation. Furthermore, there was only one ideal model used by each group rather than a number of possible alternatives, although the THWs did separately produce two models before they were combined to form one standard version. Another limitation that continued throughout the process was the separation of activities between government officers and the community. While the THWs facilitated the community exercise, it was quite distinct from the type of exercise undertaken by the government officers together. The result was that the ideals that were so described were not fully congruent.

STAGES 5 AND 6: Identifying and Evaluating Possible Changes

Stages 5 and 6 were undertaken on the second day of the meeting during 15-16 October 1991. The separate small groups continued by identifying gaps based on a comparison of the their desirable scenarios with their perceptions of their existing working situations—this was Stage 5—according to the categories described in their desirable scenarios (see Figures 4.3, 4.4, and 4.5). These gaps were identified through

Figure 4.3 Agenda of Possible Improvements and Results of Debate, Krok Phra District Health Center

Agenda of Possible Changes	Should Do	Can Do	Will Do	Comments
A. Human Resource Development:				No. 1-4—Can
1. Problem-solving process	X	X	X	only do to some
2. Visiting THCs	X	X	X	extent.
3. Distribution of resources	X	X	X	
4. Not biased/fair	X	X	X	
B. Working System:				No. 5-6—With
5. Administrate personnel in THCs	X	O	X	limitations.
6. Manage work in THCs	X	O	X	No. 9—In only
7. Education/training	X	X	X	some issues,
8. Awareness of problems in THCs	X	X	X	e.g., to sign IC
9. Decentralization	X	X	X	for VHWs.
C. Information System				
10. Information collection	X	X	X	
11. Communication by radio	X	X	X	
D. Supervision				No. 14—will try
12. Continuous/regular	X	X	X	
13. Approaches to problem solving, follow-up, monitoring by Province/District not the same	X	X	X	
14. Supervisor should have more education/skills than THWs	X	X	X	
D. Coordination (with other sectors)				No. 15—
15. Have at administration. level but at implementation. level do not have/not clear	X	X	X	limitation in authority to give orders
16. Among MoPH officers (Regional, hospital, etc.), e.g., for elderly	X	X	X	*Continued...*

Priorities:
The sixteen gaps were recategorized for the purposes of prioritization into three categories: administration (No. 3,4,5,6,9), support and education (No. 1,2, 7, 8, 10, 12, 13, 14) , and cooperation (No. 11, 15, 16). Priorities were assigned accordingly as follows, in descending order of priority for each category:

Administration: 3, 4, 5, 6, 9
Support and Education: 14, 1, 2, 8, 7, 12, 13, 10
Cooperation: 16, 15, 11

Key: x = Yes, O = No.

general discussion and brainstorming. The categories were reformulated during this process to make then congruent with the categories of gaps that emerged from these deliberations. The resultant agenda for debate were then discussed—this was Stage 6—in terms of the possibility of making such changes given the reality of their working situation. These gaps were then evaluated according to their desirability (*Should do?*), feasibility (*Can do?*) and commitment (*Will do?*). Comments were annotated and the items were prioritized.[6] The outcomes of this debate was marked in their respective columns where an "X" represents a positive response, and an "O" represents a negative response.

The outcome of the DHC group is described in Figure 4.5. It is worth noting that there were two areas where it was considered not feasible to undertake improvements, side from the other limitations mentioned under the comments. Both of these areas are concerned with direct control of the THC activities by the DHWs and it was noted that there were limitations. However, there was a commitment to try to make some improvements. It is also worth noting that, while most of the areas identified in the ideal have been accounted for in the listing of problem gaps, there are some significant differences and also some issues that have been recategorized. The issue of budget was not touched on as a problem.

[6]The DHC group recategorized the items for the purposes of prioritization.

Figure 4.4 Agenda of Possible Improvements and and Results of Debate, *Tambol* Health Center, *Tambol* X

Agenda of Possible Changes	Should Do	Can Do	Will Do	Comments
A. Village self-management				Priorities:
1. Collecting information	X	X	X	1, 4, 3, 2
2. Analyzing information	X	O	X	
3. Planning	X	O	X	
4. Requesting support	X	X	X	
B. Village Self-reliance				Priorities:
1. Weighing children	X	X	X	3, 1, 2
2. Use simple HH medicines/drugs	X	O	O	
3. Administration of funds	X	X	X	
C. Village Manpower Development				Priorities:
1. Village meetings	X	O	X	1, 2, 3
2. Training	X	O	X	
3. Visiting	X	X	X	
D. Support from:				
1. Outside Ministry	X	O	X	
E. Place of Work				Priorities:
1. Clean & beautiful	X	X	X	1, 4, 5, 2, 3
2. Fence	X	O	O	
3. Water/electricity services	X	O	X	
4. Rearrangement of rooms for client comfort	X	X	X	
5. Traditional medicine garden	X	O	X	
F. Service				Priorities:
1. Coverage of all problems	X	X	X	1, 2, 5, 4, 3
2. Capability of THWs for some activities	X	X	X	
3. Sufficient equipment	X	O	X	
4. Increase fee income	X	O	X	
5. Use traditional medicine	X	O	X	
G. Activities				Priorities:
1. Information center	X	X	X	2, 1
2. Evaluation and monitoring	X	X	X	

H. Additional Manpower				Priorities:
1. Technical staff	X	O	X	1, 2, 3
2. Dental technician	X	O	X	
3. 4-year nurse	X	O	X	
I. Human Resource Development				Priorities:
1. Increase knowledge	X	X	X	1, 2, 3
2. Collaboration with other Ministries personnel (TCSC)	X	X	X	
3. THWs work together	X	X	X	

Key: x = Yes, O = No.

collaboration with others and information system received little attention, and problem solving has been relocated from "supervision" to "human resource development".

The standard ideal for the THC was used separately by the respective THC groups to identify problem gaps and, subsequently, to determine their desirability, feasibility, commitment, and priority. Figure 4.6 summarizes the decisions reached by the THWs of Tambol X. The identified gaps corresponded well with the elements of the ideal, with the first three categories (A-C) concerned with community organization and the remainder (D-I) corresponding to the administration and the working system of the THC. Nearly all areas were accounted for with the notable exceptions of the development of the Head of the THC and issues concerned with the roles and career advancement of the THWs. There were a number of areas which were considered to be not feasible; however, most were still given commitment to make an effort. The exceptions were the building of a fence around the THC and efforts to improve the use of medicines and drugs. These issues, along with the others, are discussed more fully under Stage Seven. In the case of the fence, it should be noted that this was later deemed undesirable What was a number of areas that addressed

problem solving at the village level (A. 2-3, C. 1-2) were considered not feasible and that, despite this, two (C. 1-2) were given top priority.

Figure 4.7 describes the outcomes of the identification of problem gaps, and the evaluation of desirability, feasibility, commitment and priority for Tambol Y. These gaps are, again, congruent with the combined THC ideal and are similarly categorized as: support for village development, working system, and administration. There are a number of areas that were deemed not feasible. In the area of support for village development, situation analysis, administration and management of community funds, and generating support from outside the ministry were so identified, but only outside support did not receive a commitment. In the remaining areas of the working system and administration, there were also a number of areas that were not considered feasible, essentially most were those over which the THWs had little or no control. One exception, again, was the construction of a fence but, as described under Stage Seven, this was later deemed undesirable. It is noteworthy that these THWs, as compared with the group from Tambol X, identified a gap that addressed the issue of budget control. Other differences between the two THCs were that this group considered that efforts to support village development were more feasible. This group was also inclined to commit themselves to efforts to improve services despite their having been determined unfeasible with the exception of efforts to increase the number and types of staff.

These activities, which met the first two objectives of the meeting occupied nearly all of the available time. It was decided that objective three, agreement on objectives for improving the situation, would be postponed to a later meeting to allow for time to consider the outcomes of this meeting. This session was concluded with discussion concerning objectives four and five. Concerning the fourth objective, to provide information on the next stage of the research, there was agreement to have the THWs consider: (1) the desirable village scenarios from the

Figure 4.5 Agenda of Possible Improvements and Results of Debate, *Tambol* Health Center, *Tambol Y*

Agenda of Possible Changes for Debate	**Should Do**	**Can Do**	**Will Do**	**Comments**
A. Knowledge (self-reliance)				
1. Collect data	X	X	X	
2. Analyze situation	X	O	X	
3. Plan	X	X	X	
4. Ask for support	X	X	X	
5. Weigh babies	X	X	X	
6. Use basic drugs	X	X	X	
7. Administer/manage comm. funds	X	O	X	
B. Personnel Development				
8. Village meeting	X	X	X	
9. Training	X	X	X	
10. Visiting	X	X		
C. Support				
11. From outside Ministry	X	O	O	
D. Locality				No. 3—
1. Clean, neat	X	X	X	Referring to
2. Fence	X	O	O	water
3. Basic public services	X	O	X	
4. Traditional medicine garden	X	X	X	
E. Services				No. 6—in some
5. Coverage of all problems	X	X	X	issues only
6. Increase capability of THWs	X	O	X	
7. Increase equipment	X	O	X	
8. Increase fees	X	O	X	
9. Authority to control budget	X	O	X	
10. Use traditional medicine	X	X	X	
F. Administration				
11. Have information center	X	X	X	
12. Evaluation/monitoring	X	X	X	

G. Manpower				
13. Optimize division of work	X	X	X	
14. At least three staff	X	O	O	
15. More technical staff	X	O	O	
H. Management				
16. Cooperation among THCs	X	X	X	
I. Head of THC				
17. Should have good work administration, optimal use of time, optimal work system	X	X	X	
Priorities: (a) for Support of Village Development (A-C): 1, 3, 6, 5, 7, 11, 12, 4, 10, 9, 8, 2; (b) for Working System (D-F): 1, 3, 6, 5, 7, 11, 12, 4, 10, 9, 8, 2; (c) for Administration (G-I): 13, 17, 16, [14 and 15 not included].				

Key: X = Yes, O = No.

THWs' point of view and (2) the desirable THC scenarios from the villagers' point of view, in order to describe the gaps between desirable and existing situations for both. This would be undertaken by the THWs meeting, by November 20th, with representative village groups (10-15 persons) for each of the four villages which were comprised of: (1) representatives of housewife and elderly groups, (2) natural leaders, (3) Village Committee members (2 persons), (4) a representative of the VHWs, and (5) a Buddhist monk In the general discussion, the following items were agreed:

1. The normal roles of each level (NRTC, DHC, THC, and villagers) would be followed in undertaking the steps of PAR (SSM).
2. At the community level, the THWs go to describe the desirable scenarios together with the villagers.
3. The NRTC will provide support for No. 2 in terms of: 20 Baht per person for lunch, documentation on the SSM process, and stationary.

4. Mr. Uthit would provide clarification on the Community PHC Center (CPHCC)[7] for the DHWs and THWs before the end of October.
5. The next meeting would be held on October 24th, 09:00-16:30, since the second objective was not completed during this meeting. NRTC would prepare summaries of the outcomes of this meeting for the participants.

The second meeting was held as planned and attended by the same participants. In the interim period, the representatives of each facility discussed the outcomes of the previous meeting with their respective colleagues and reviewed in detail the agenda for improvements. In an initial plenary session, the results of these reviews were discussed. There were three levels involved in this exercise: District, *Tambol* and village. The planning stage focussed on the two interfaces involved, i.e., DHC with THCs, and THC with villages. During this session, the three groups representing the DHC and the two THCs worked jointly to prepare objectives for improvement activities as a standard plan. In the closing session of the day, preparations for the village meetings were discussed.

Meetings for Villages A and B of *Tambol* X were held on December 17th at a village temple, and December 23rd at the village reading center, respectively. They were conducted during mornings (09:00-13:00) and followed by a lunch sponsored by the NRTC. Attending the meeting at Village A were: (1) four District officers (the DHO, Assistant DHO, Deputy DHO, and District Public Health Technical Officer); (2) the three THWs from the THC, *Tambol* X, (3) two members of the research team; (4) the Village Headman and two other members of the Village Committee; (5) two VHVs and three VHCs; and (6) three villagers, including a former Headman. Attending the meeting at Village B were: (1) the same DHC officers; (2) the three THWs; (3) Audio-Visual Officer, NRTC; (4) the Village Headman and four members of the VC; (5) one

[7]The Community PHC Center was one of the new initiatives of the Seventh Five-Year Plan that was introduced on October 1st. The implications of this is discussed subsequently.

VHV and one VHC; and (6) seven villagers. Both meetings were conducted in a similar manner. The objectives of the two meetings were to (1) describe the ideals of the villagers and the THWs, each for the other; (2) to determine the desirability, feasibility, and commitment for each item which was treated as a development goal; and, (3) to plan improvement activities to achieve the determined goals. The meetings were led by the THWs with the villagers; DHC and NRTC officers were observers. General discussion was the technique used throughout. The identified ideal/goal items were given "Yes" or "No" response to the questions: Should do?, Can do? and Will do?; and qualifying comments were noted. Priorities, in these cases, were not assigned. The plans were formulated according to: activities, goals, steps, responsible person, time and personnel.

Meetings for Villages C and D of *Tambol* Y were held on January 29th at the village meeting hall, and January 27th at the village rice bank, respectively. The meetings were each led by the two senior THWs, Mr. N. and Miss. W. At Village C, the Village Headman, who is also *Kamnan*, and 14 villagers attended. At Village D, the Village Headman and 13 villagers attended. The objectives of the session were to: (1) described the desirable scenario for village development, (2) to identify the agreed needs of the village, and (3) to outline a plan of action for solving the identified problems. These sessions were both full-day, from 09:30 to 16:30 and included a lunch sponsored by the NRTC. There were no representatives from the NRTC present at either meeting and, therefore, no recording of the details of the process. The outcomes of these two meetings were, first, a description of the desirable scenarios for the THC from the perspective of the THWs, and second, an itemized description of the desirable scenario for the villages from the perspective of the THWs and village members, which included a description of desirable: participation and governance, occupation and employment, management of community funds, and knowledge,

Figure 4.6 Agenda of Possible Improvements and Results of Debate, Village A, *Tambol* X

Agenda of Possible Changes for Debate	**Should Do**	**Can Do**	**Will Do**	**Comments**
A. Cooperation among villagers				1 and 3:
1. participate in meetings and development	X	X	X	Sometimes can not do because
2. unity among leaders and VC	X	X	X	of season.
3. public relations by VC	X	X	X	
B. Health				1, 2 and 4: Can
1. belief in magic	X	X	X	be done
2. knowledge about sources of care	X	X	X	partially.
3. prevention of epidemics and communicable diseases	X	X	X	
4. do not use "quack doctors"	X	X	X	
5. have knowledge and self-care	X	X	X	
C. Sanitation				
1. adequate year-round drinking water	X	X	X	
2. latrine for every HH	X	X	X	
3. waste disposal facilities	X	X	X	
4. proper and edible fences	X	X	X	
5. village water supply facility	X	O	O	
D. Funds				1: not every HH
1. rice fund, silo	X	X	X	can participate
2. funeral fund	X	X	X	
3. know how to use the community fund	X	O	O	
4. market demonstration center fund	X	X	X	
5. health card fund	X	X	X	

E. Communication				
1. Voice of the Village	X	O	O	
2. public phone	X	O	O	
3. broadcasting tower	X	X	X	
5. village information center	X	X	X	
4. reading material for reading center	X	X	X	
F. Disease Prevention				1: no budget.
1. free rabies vaccination	X	O	O	
2. Injectable birth control for dogs	X	X	X	
3. no 1st degree malnutrition	X	X	X	
G. Ideal THC (physical)				4: seasonal; 5:
1. health center at village level	X	O	O	no budget.
2. fence	X	X	X	
3. water reservoir	X	X	X	
4. clean, beautiful, flowers	X	X	X	
5. more beds	X	O	O	
H. Ideal THC (services)				2: can not
1. village visit by THWs every month	X	X	X	expand; 3: no budget; 6:
2. dental hygienist	X	O	O	limitation of
3. transportation to refer patients	X	O	O	THW potential;
4. free services for elderly	X	X	X	7—according to
5. provide welfare cards for low-income villagers	X	X	X	need; 8—no budget.
6. sufficient drugs for treatment	X	0	O	
7. more THWs	X	0	O	
8. adequate equipment	X	0	O	
9. VHWs do not have enough weighing scales	X	X	X	

Key: x = Yes, O = No.

Figure 4.7 Agenda of Possible Improvements and Outcomes of Debate, Village B, *Tambol* X

Agenda of Possible Changes for Debate	Should Do	Can Do	Will Do	Comments
A. Cooperation (leader, VC)				
1 good representation of villagers	X	X	X	
2 Thorough dissemination of info.	X	X	X	
3 able to help solve problems of village	X	X	X	
4 there is unity	X	X	X	
B. Villagers				No. 3—
1 cooperate in development activities	X	X	X	seasonal.
2 participate in village meetings, punctually	X	X	X	
3 good economic status, employed	X	O	O	
C. Health				
1 healthy, absence of disease	X	X	X	
2 health info. is disseminated	X	X	X	
3 know about cleanliness of the environment	X	X	X	
4 health care provider in village	X	X	X	
D. Environment				No. 1: lack of
1 water supply	X	O	O	water source;
2 water reservoir (pond)	X	X	X	No.5: Did not
3 potable drinking water storage	X	X	X	do.
4 sanitary latrines, 100%	X	X	X	
5 fence	X	O	O	
6 garbage cans, cleanliness	X	X	X	
7 public hall	X	X	X	
E. Community Funds				
1 drug cooperative	X	X	X	
2 elderly club	X	X	X	
3 health card fund	X	X	X	
4 every HH participates in community funds	X	X	X	
5 village development fund	X	X	X	
6 control of agricultural market	X	O	O	

F. Information				
1 broadcasting tower	X	X	X	
2 reading center at another cluster	X	X	X	
G. Disease Prevention				
1 Rabies vaccination for dogs	X	X	X	
2 monthly health card	X	X	X	
H. Ideal THC				No. 6: Not fully
1 clean, cool	X	X	X	equipped.
2 beautiful, garden	X	X	X	
3 modern equipment	X	X	X	
4 adequate equipment	X	X	X	
5 THW available during holidays	X	X	X	
6 birth delivery at home	X	O	O	

Key: x = Yes, O = No.

education and culture. (see Figure 4.8) The second outcome was a common plan for village problem solving to be undertaken in both villages which detailed: the gaps or needs for development, the rationales for those needs, the proposed solutions, the time frame, and those responsible for taking action. The combined village plans were presented during the summary meeting held in June(see Appendix F).

Discussion

The purposes of Stages 5 and 6 are: (1) to create an agenda of possible changes through the comparison of the models produced in Stage 4 with the reality of the problem situation (Stage 5), and (2) to debate those possible changes in terms of their desirability and feasibility (Stage 6). As was noted above, the models for the DHC and THCs created in Stage 4 were aimed at defining problem-solving gaps between ideal and real. These gaps were further refined during Stage 5 where the already identified ideals of Stage 4 were compared through brainstorming and discussion

Figure 4.8 Desirable Scenarios for THC and Villages, *Tambol* Y

A. Views of Village Leaders and the THWs, what they wish to see concerning THC operations.

1. Regarding services to the communities:

   — enough personnel, available all the time, at any one time
   — sufficient personnel, 4-5, including dental hygienist and nurse
   — a doctor should rotate among the THCs regularly to provide service, at least once a month
   — THWs should have good human relations with the clients
   — THWs should visit the villages one a week and to give advice to those who are ill and to help solving health problems and causes

2. Regarding the facilities of the THC:

   — expansion of health center and increased number of beds
   — attractive surroundings: fence, trees, flowers, herbal garden; clean and tidy; concrete surface
   — good , adequate water supply
   — good electricity supply
   — educational materials about illness, health, and public health activities

3. Regarding methods of operation:

   — free medical services, adequate supplies/equipment ready to serve
   — availability of all vaccines as they are developed
   — THWs to go to the village to pride vaccination
   — support village water supply plan; locate/provide reservoir for clean water supply
   — support sanitary latrine for every HH by supporting revolving fund
   — support rabies control program by control of dogs and free/low price birth control for dogs
   — there should be weighing scales at the THC
   — there should be enough equipment for treating certain diseases
   — an ambulance should be available at the local level

B. Views of Village Leaders and THWs, what they wish to see concerning the village

1. Regarding Public Facilities:

   — every house should have access to electricity
   — electric lights on the roads of the village
   — water supplies, especially potable water
   — paved roads within the village

2. Communication and Information:

   — broadcasting tower so as to provide information to all clusters
   — walkie-talkie to use in cases of emergencies
   — public reading place and public telephone

3. Sanitation:

   — every HH has sanitary latrine
   — potable drinking water all year round
   — garbage cans and proper waste disposal by every HH
   — program for cleanliness/sanitary condition of every HH including animal areas

4. Health Status:

   — the villagers are strong and healthy
   — enough food (all five food groups and sufficient quantity)
   — HH should not have more than 2-3 children according to status
   — elderly receive care
   — day care center to release the burden on parents/caretakers
   — health education program to train children at a young age so that parents will have enough time for work
   — health promotion program to increase understanding
   —antenatal care, birth delivery, post-natal care and family planning
   — people should know how to take care of own health by preventing complications and by proper use of drugs in village
   — villagers understand and can take appropriate action about preventing certain diseases, especially immunizable diseases
   — villagers know how to prevent accidents and can take preventive action
   — villagers do not smoke
   — villagers should change certain attitudes that are inappropriate, i.e. some traditional beliefs

5. Participation and Governance:

   — leaders and villagers participate in the development activities of the village
   — leaders can obtain and analyze data, formulate plans, and implement the plans to solve problems that can be done at the village level appropriately, and know how to use the existing resources properly
   — during leisure time, the people do development activities, working together: thinking, doing, maintaining
   — The villagers should be well-united, help each other, know how to forgive, know what is right and wrong, and do not try to corrupt each other
   — each leader, group and organization knows their function and responsibility
   — Villagers cooperate, pay attention to one another, and help each other to improve and develop their village when they have the opportunities
   — village leaders should be ones who are devoted, exercise justice, and pay attention to the villagers

— leaders should be able to formulate plans and propose budgets to improve the village appropriately and in a timely fashion
— leaders and villagers should follow democratic ways and be honest with each other

6. Occupation and Employment:

— villagers have access to water for agriculture
— villagers have their own land for cultivation
— villagers have supplementary occupations to increase incomes for their families
— there should be sources to but agricultural products from farmers in the village without taking advantage of the farmers
— villagers should know how to prevent certain diseases of their crops
— every HH should have their own occupation and sufficient income

7. Management of Community Funds:

— there should be ways of integrating community funds into one and it should have a proper management system
— every villager should attend to community activities and make use of community funds appropriately

8. Knowledge, Education and Culture:

— the younger generation should complete at least secondary school (*Mor.* 6)
— every villager should have access to educational resources and should continue to higher education
— villagers should participate in religious activities such as giving food to monks, especially during religious holidays and festivals
— villagers should participate in cultural and traditional activities and develop such cultural and tradition that is appropriate for the times

with the reality of the problem situation. This comparison, like the models themselves, did not benefit from the SSM techniques of systems thinking or comparisons with alternative models. Also, throughout this process of comparison there was only a single ideal model used for each level. Even where the THWs worked separately, there was a combination of the two outcomes in plenary sessions afterwards.

The corresponding efforts undertaken in the villages did not benefit from model building as a means of describing possible changes. The techniques used at the village level, lacking clear guidelines, became attenuated as they were transferred further to the community level. The techniques became even more like those of the past and, therefore, questions must be raised in terms of the effects of the relationships between government officers and the community in undertaking this process. There quite possibly were significant differences being initiated in the District problem-solving process as a result of the techniques being used among the government officers of the DHC and THCs in this research. While this may have had some effect on the manner by which the study was carried out by the THWs at the community level, it was unlikely that significant changes in the collaborative efforts of the community and the THWs could have taken place in the short term.

STAGE 7: Planning and Implementing

The implementation of the agreed changes was initiated, in the cases of the DHC and THC, according to the usual procedures for undertaking internal government activities. Joint government-village development projects were considered to be primarily the responsibility of the Village Committees but the extent of actual involvement by THWs could be variable. It was judged too early to undertake any extensive evaluation at the operational level as the time involved until the official end of the project (June 1992) was the dry season when many of the

villagers seek work in other provinces. A meeting was planned for May 20th-21st at the NRTC in order to conduct an evaluative review of the project activities for the end-of-project report. In addition, I asked the research team to conduct their own focus group discussion to review the research as a general evaluation of the project. The intention was to provide some broad areas for a subsequent, more detailed evaluation.

The May 20th-21st meeting was conducted in two parts: on the first day, the co-researchers from the DHC (the DHO, Assistant DHO, and PH Technical Officer), the THC, *Tambol* X (Mrs. D and Mr. S), and the THC, *Tambol* Y (Mr. N. and Miss W.) joined the research team to report on the outcomes of their more detailed planning for improvement activities. Those present discussed the DHC-THC plans and preparations for the next day's meeting with the representatives from the villages. The research team prepared evaluation questions to be used in small-group sessions with each of the groups during the meeting. In making the preparations, the research team set up a large meeting room with one long conference table to accommodate the approximately thirty-five people who would be attending. When I questioned the arrangement, considering the intention to conduct small group evaluative sessions, the team members replied that this was the arrangement that the District-Tambol officers had requested so that all attending could learn from one another. I suggested they should follow these wishes but attend to communication during the meeting.

On the second day five representatives from each of the four villages joined with the above-mentioned officers and team members. There were also three observers from the Provincial Chief Medical Office. Each group made presentations of their planned development activities. During the morning session, the government officers made their presentations and in the afternoon the four Village Headmen made their presentations. At the close of the morning session, one of the team members asked if the group would like to break into two smaller groups, one for

each *Tambol*, in order to facilitate discussion. The response from the Village Headmen was that they would like to stay in one large group in order to learn from one another. As a result, there was no opportunity for the team members to use their evaluation questions.

On June 16th the research team met for approximately five hours to consider the general evaluation questions and prepared a written report of their responses. The five open-ended questions are described in Appendix H. Subsequently, given the problems of assembling the team[8] because of increasing commitments to other Ministry programs and the selection of the NRTC in July as the provincial Poll Watch Center[9], it was decided to defer the detailed evaluation for a later date. In addition, I considered it preferable to use such a detailed evaluation as the basis for taking action to improve the on-going research and, thus, deferment would be preferable for this reason also.

District and Tambol Levels

A great deal of the planning process took place during the normal working context of the DHWs and THWs which also includes their interaction with villagers. The research team was not informed about many of these activities as per the agreement that these would be undertaken in the course of normal working arrangements. On one or two occasions, even when informed, the research team members were not available to attend. Thus, a meeting was held to review the operational aspects of planned improvements in order to provide all of those involved, who would not meet in the normal course of events as a whole group, the

[8]Two days after the general review meeting in May, the Director/P.I. left for a four-month civil service training program in Bangkok.

[9]Poll Watch was a government program established to monitor campaign and election violations for the September 13th national elections. Several of the research team members were coopted to work for this program.

opportunity to inform each other of their plans and progress. On the first day of the two day meeting, the DHC and THC officers met with the research team to review their plans. The summary presented in Appendix G describes the outcomes of that discussion as presented on the second day when this group was joined by five representatives from each of the four villages.

Overall, the the plans for improvement within the DHC show little in the way of concrete measures to improve the identified problem situations—the majority of responses are explanations of why change is difficult or that the existing processes should serve. In some cases, such as "A.1.3/1.4 Distribution of Resources/Fairness", it is indicated that no concrete solution has been identified as yet. There are, however, a few specific plans to make improvements and some indications that, at least, awareness about certain problems has been increased. In the category of "A.1 Human Resource Development", there are two specific commitments to modify the working system such that: first, brainstorming would be used by the DHWs for problem solving among themselves and in working with THWs; and second, the DHO would make informal monthly visits to the THCs in order to facilitate their problem soling. This second element also touches on the issue of decentralization of authority, although it is not identified as such, as it mentions that the THWs would be given responsibility to solve their own problem without intervention unless their were an expressed need. Increased awareness of problems was specifically mentioned concerning technical problems of radio communication. There was also indications of increased awareness concerning the differences in problem solving approaches between the District and Province, and concerning coordination with other sectors.

Concerning joint undertakings by DHWs and THWs to improve the THCs, there is a similar resignation to factors in the uncontrollable environment. It is difficult, for example, to increase the number of staff because of the Ministry's manpower

structure (B.2.1), or to order new equipment because of government procurement procedures (B.1.4) or to increaser water supply for the THCs because of their being in dry areas (B.1.3). The proposal to build a fence around THCs was, on consideration, reclassified as undesirable as it would have created a sense of separation between the THCs and the communities. Other proposals were vaguely optimistic that future circumstances would provide opportunities to develop improvement plans, such as with "B.3.1 village data collection, and analysis and plan formulation" where there, "...are indications of a trend of increasing perceptiveness after the THWs visit them.". One encouraging indication was given at this time: The DHO suggested that he would like to expand this project to the entire District, involving all THCs, as part of his plan to reorganize the DHC working system.

Village Level

The village representatives described their plans for making village improvements. The detailed plans for village projects are described in Appendix 4.6. The plans for both Villages A and B, Tambol X, address the problems of sanitary toilets and safe drinking water. The plans were outlined in terms of: activities, goals, steps, responsible persons, time, and personnel. Both goals and personnel, however, had no entries. The steps described for this activity were: (1) to survey those at risk, those who do not have a sanitary toilet, and those who want one; (2) the VC follows up each house accordingly; and (3) solve the problem. Responsible persons were identified for each village cluster, and dates were set for undertaking each activity. The problem of drinking water was addressed through seven steps: (1) survey those at risk, (2) select those who want to participate, (3) interview all concerned, (4) order materials, (5) sign agreement, (6) follow up; and (7) evaluate. Members of the VC were identified to be responsible for these steps and specific dates were set for each task. There was, however, no reporting of any results as yet from these activities. During the meeting, the Headman of Village B proposed that they

had planned to dig a deep well to improve water supply in addition to the sanitary latrine project and, therefore, they were proposing a budget increase.

The proposed improvements for Villages C and D, Tambol Y, were combined into a joint plan which detailed: (1) the need; (2) the need or rationale for action; (3) the proposed solution; (4) time; and (5) the persons responsible. The needs identified included six areas for improvement: public services, information, environment, health, village cooperation, and community funds. Again, the proposal for Tambol Y is both broader and more detailed than that prepared for Tambol X. To a certain extent, the needs/rationales provided some analysis of the problems and the evaluation of feasibility and commitment that was not undertaken during Stage Six. Another noteworthy difference between the two Tambols' plans was that the participation in the Tambol X plans were limited to the village, while the plans for Tambol Y also include VHWs, THWs, and the Tambol Council. The proposal for activities proposed for Tambol Y were projected for 1992-1993 and no further reports were available.

Formative Evaluation by the Research Team

For the purposes of reviewing the results of the completion of the first full cycle of the research process, the research team was asked to conduct their own focus group discussion based on five general evaluation questions. The questions and the teams responses are described in Appendix J. The first question was misunderstood such that, instead of answering question i.a with a negative/positive, the team provided a summary of the philosophy, methodologies and techniques of PAR. Question 1.b, concerning the areas were more learning was needed, there response was that both the methodology as a whole and certain specific techniques required more learning; especially with texts and materials in Thai. There was also a comment about the limitations experienced as bureaucrats in undertaking the research, particularly

regarding the time factor. Questions 2 and 3, which were related, were answered together, although there were limited responses to suggest how to overcome these problems. There comments reflected some need for skill development, problems of using terms such as "ideal" in practice, and some of process issues regarding the techniques used in inter-group work and team building. The positive effects of the research described in response to Question 4 suggest that there was considerable learning by the team members and that they were able to apply some of this to related work. The negative impacts reiterate their difficulties in undertaking this research within a bureaucratic system and the confusion that attended the learning of new methodologies and techniques. The fifth question was not answered.

Discussion

The seventh stage is a culmination of the cycle of research-cum-learning of SSM. It is also an internal validity check on the processes that occurred during the previous stages and their outcomes: if the problem situation was adequately analyzed and the solutions sufficiently congruent with the critical features of this situation, then the plans for action should yield the expected improvements (Checkland, 1981). It is important, however, to acknowledge that the planning process itself may confound this overall process, in particular, there is, as Wilson and Morren (1990) have pointed out, often a gap between what is planned and what is actually done. Therefore, the seventh stage is itself does not serve as a final evaluation but only as one part of the overall process which must be continued before validity can be checked. Evaluation of the actual outcomes or impact of the planning will require a longer-term perspective than is possible at this juncture. However, there are sufficient outcomes from the planning process and review of the plans themselves to begin a review of the process undertaken as a basis for its continuation.

The plans of the DHC and THCs revealed a tendency to explain away the need for change, although there were notable exceptions in the plans to modify working relationships between the DHC and THCs as well as the awareness of other problems where no concrete plans had yet been made. Some issues were neglected in moving through the latter stages, especially those that referred to improvements at the District level. This is an interesting contrast: while the District-level concerns tended to disappear as the agenda was developed, the clearest plans for improvement at the District-Tambol interface were those that involved the DHC.

Most of the agenda items were viewed as already being accounted for within the existing system. It would appear, from the perspectives of both sides, that the authority to determine the agenda and to decide on improvements rests with the DHC. Where the THWs display their control is in their relations with the village. Therefore, this demonstrates that the relations between respective levels are largely one-way, top-down, although this is ameliorated by the independence of each subordinate level. The relations between THWs and villagers were tenuous, although it appeared that the THWs probably enjoy better relations than government officers from other Ministries. As noted above, however, it is likely that the interactions among those involved in this project were greater than had been the case previously, especially District-*Tambol* and *Tambol-Tambol* interactions.

The planning processes were variable, with both the DHC and the combined THCs making policy statements only, not making specific plans for action. This may have been the effect of the transition from the project to the normal working setting. It may also reflect inadequate analyses of the problem situations and the desirable situations which, as noted, were not undertaken to the extent suggested. In light of this, it would be important to ascertain the extent to which the government officers at both District and *Tambol* levels would be prepared to make changes. As

there was a focus on the QoL/BMN process, there may have been an assumption among them that improvements would primarily concern the village level.

The villagers, however, did complete specific plans for improvement although there were considerable differences among them. For Village A,Tambol X, plans were outlined which specified at least some of the expected components although not all were completed. The activities were simply named, and the steps were quite general, they would have been more accurately described as activities. Looking at the identification of responsible persons, there was a noticeable absence of anyone outside of villagers but, as the plans concern sanitary toilets and potable water, it is likely that the involvement of the THWs was assumed. However, it is still worth noting that the plans did not specify their roles. Village B, which was characterized as a poorly organized village, prepared minimal plans, only a list of activities. The main planning concern, in keeping with what was identified in the situation description, was the issue of communication within the village.

The combined plans for Tambol Y, were remarkably well developed, both in terms of the breadth of issues addressed and the details of planning. The description of the need or justification for the proposed improvements was a significant addition since this had not been recorded as part of the debate. What must be considered in view of the outcomes is to what extent this variety reflects differences between Tambols and villages. There were indications of differences between the relationships of the THWs with the villagers and there were clear indications of differences in the capacities of the respective villages. With regard to this issue of capacity, however, there is a need to distinguish between the capacity to prepare plans and the capacity to implement improvements. A further distinction is necessary regarding how these capacities may vary under different circumstances. It has been noted that villagers are generally quite capable in undertaking their own development but that cooperative activities have a less successful record. These

issues, as well as those raised concerning earlier stages, need to be considered in the longer term and, ideally, by reiterating the problem-solving process.

CHAPTER 5:

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

What must be tested when the success is tested is whether by this means I can draw attention to the real things in the world.

Iris Murdoch, ***Under the Net***

SUMMARY OF THE RESEARCH

This study was an exploratory case study which addressed an identified need to improve community health problem solving at the District level in Thailand. Health problem solving is undertaken in this context through the Basic Minimum Needs approach which involves the measurement of predetermined set of indicators in order to determine targets for community-level development. The management of these development activities is prescribed as a process that ideally involves community and government officers in a collaborative systematic problem-solving process which is expected to provide a rational, effective and efficient means to achieve the predetermined targets for health. More than this, it is explicitly expected that this process can progressively enable the community to become more involved, more empowered and more capable at managing their own health development problem-solving process. Considering these expectations, the study was designed with a conceptual framework that included four main themes of analysis in order to create links between these expectations and relevant theoretical perspectives. These themes of analysis considered: (1) problem solving as a development process, (2) participation in problem solving; (3) problem solving as learning and empowerment; and (4) the management of problem solving.

A position was taken that the improvement of problem solving could not legitimately be addressed by assuming that any particular aspects of the situation were in need of change or that any aspect was more significant than others, especially as defined from any one perspective. These considerations led to the adoption of Participatory Action Research (PAR) as the methodology for this study. The development of PAR methodologies, however, has had a relatively short and quite contentious history which has been embroiled as part of a broader set of arguments concerning social science research and human-social development. In light of this, SSM was perceived as a well-established PAR methodology which had a philosophy that was especially congruent with that of the problem-solving process under study. SSM was adopted as an appropriate means for discovering how health development problem solving could be improved in the identified problem situation.

The methodology—a reiterative process for making improvements in ill-structured problem situations—had, however, not been applied in a setting that was similar to the one found in this study. This made it necessary to design this research as research to discover how SSM could be applied in this context. Therefore, the main questions asked concerning the Quality of Life Improvement Program in Thailand were: How can SSM be modified to fit in this particular context?, How can the methodology and techniques be operationalized in the real work setting?, and What implications does this have generally for the practice of health problem solving? The research was conducted under the auspices of the Ministry of Public Health through one of the regional Primary Health Care research and training centers. The research associates of that center in the Northern Region were the main actors for the application of the methodology which was undertaken under regular working conditions along with the other responsibilities of the center. My role was that of a consultant transferring the methodology to the research team. The research site was a District Health Center, two subordinate *Tambol* Health Centers

and four villages in their respective catchment areas. Over a period of approximately eighteen months, one cycle of the methodology was completed.

Adaptation of the Research Process

The development of the methodology and its techniques was described by its developer, Checkland (1981), as an action research-cum-learning process in itself. This methodology was also described as a process that could be applied by a practitioner to an ill-structured problem situation as a means to engage those involved in making changes to improve the situation. Further applications of the technique as described by Wilson and Morren (1990) provided useful guidelines for the application of the technique in field settings. I assumed the role of the practitioner, albeit a very tentative one, transferring the technology to the research associates as a means of answering the research questions of how the methodology could be applied in the context of health development problem solving.

The methodology primarily involves a cycle of inquiry activities that involve: (1) an open, broad inquiry into the defined problem situation that is guided by an aim to capture the situation as experienced and perceived by those involved; from this complexity (2) the grasping of what appear to be the main themes of purpose and concern that suggest where improvements may lead, (3) the use of systems thinking to elaborate upon these themes in order to construct models of what an improved situation would entail; (4) the comparison of these models with theoretical models and with the actuality found in the problem situation in order to identify possible changes that would improve the situation; (5) the evaluation of these potential changes to select those that are desirable and feasible; and (6) the planning and implementation of those changes.

The transfer of technology was mainly undertaken by providing guidelines and examples of the methodology and suggested techniques, engaging in informal dialogue, and reflecting on actions taken. Communication, team building and problem solving were introduced as important bases for the execution of this methodology. The research team was given considerable freedom to apply these principles and suggestions in the research setting, as they thought appropriate, by engaging those involved according to the normal working procedures. The team orchestrated the inquiry process with the government officers and the village representatives following the prescribed stages. I, as an outsider encouraging their ownership of the process, tried to maintain a difficult balance between roles as a learner and as an enabler of the team members' own learning process. The team members, in turn, were relative outsiders who were both studying a situation while intervening to enable those involved to implement the methodology.

While the team worked effectively under difficult circumstances in applying the methodology, there were some aspects that appeared to lack fit with the situation. Some techniques were judged by the team to be too difficult or inappropriate for use, such as cartooning, model building, and, at first, dendogramming. It is essential to question, however, whether the lack of fit was with the techniques, or whether it was with the methodology or its philosophy. The example of mind mapping is instructive. I should preface this account with a characterization of the team as having, on the whole, a very willing and positive attitude towards this research. Comments to this effect were made by a number of the project advisors who had worked previously with them. Also, this research—which, it was emphasized, was a promising alternative research methodology for health development practice—had received strong support from significant superiors such as the Director of the Office of Primary Health Care and a number of their former teachers. However, my observation was that the initial reaction to the suggestion that they adopt dendogramming as a technique for recording interviews

and for summarizing data was, aside from a modicum of interest, generally reluctance. While there are a number of possible reasons for this, what is significant was the discovery of a translation in Thai of a text which gave an in-depth description and theoretical background as a study technique. Following this, there was a much more extensive use of the technique by the team members.

This was only one example of a variety of reactions to the methodology and its techniques, but one which had a more overt history that was indicative of what was needed to overcome the reluctance, or what was the nature of the lack of fit. Another example that was cited above was the reluctance to investigate issues that involved frank socioeconomic conflicts within the community, the land-use dispute involving Village B. There were a number of other examples for which a history was not as overt, including some that concerned fundamental aspects of the methodology. Rather than use systems thinking to describe notional models of improved situations as a basis for comparison, the team opted for a more classical problem-solving approach by defining problems gaps based on ideal-real comparisons. The team's position was that root definitions, CATWOE, and systems modelling concepts were too difficult for the government officers and villagers to use. However, this flat rejection without apparent interest, some consideration of alternatives, or experimentation, by the team members is suggestive of other explanations. There is insufficient information at this juncture to do more than speculate about this issue, but there are some important implications concerning the overall difficulties in the assimilation of the methodology.

The research project was, concerning these difficulties, itself a messy, ill-structured problem situation. It occurred to me that those involved would all benefit from using SSM to improve the research process itself. The Director's response to this suggestion was that it would probably confuse matters rather than improve them. Under the circumstances, this was most likely true. However, the application

of SSM could clearly not be taken as a simple undertaking of the process without consideration of the complexity of issues surrounding its introduction into this situation. What was accomplished was encouraging, but there was a need to consider how the process could be continued so as to resolve these difficulties which, in my view, threatened its capacity to achieve the necessary sustainable and generalizable fit with the situation. My conclusion was that the process would have to be continued and that the experience gained in this first attempt would be appropriately stimulating input for a reconsidered learning process to transfer the technology.

Another significant constraint reported by the team was the lack of time available for undertaking the process; especially during the first two stages of the study. Checkland's own work was primarily undertaken in consultancy situations. Although he described the duration of these studies as quite variable, there was a specific amount of time allocated for the purposes by both the analyst(s) and the owners of the problem situation. In this study, the time allocated for conducting the activities, both those among the team alone and with their co-researchers, was constantly in competition with other regular duties for all involved. This was a serious reported constraint on the team's performance. With reference to the technology transfer process, the decision to follow normal working routines was something of a contradiction as much of what was intended or actually undertaken was not part of the regular working procedures. This issue will be discussed further below.

There was much, despite the constraints described above, which was well executed by the team and co-researchers. Overall, those activities and techniques which were attempted did not appear to present any serious problems during execution Relationships among those involved remained effective and may well have improved as a result of the study. The main difficulties were in what was not attempted. These gaps in the process, particularly those techniques which involved

systems thinking, remain as areas which are worthy of further consideration. It may well be that the approach to technology transfer was a significant factor in this matter. At this point, it is only possible to speculate as one cycle of the process is hardly adequate as a basis for making any meaningful evaluation of the process. There were indications that interest in pursuing the project was retained and plans for the continuation and expansion of the project were already prepared by the end of the sponsored project.

Technology Transfer Process

The technology transfer process can be described in terms of two phases. At the beginning of the project, there was a series of relatively formal didactic sessions, involving a number of advisors, to initiate the project. While there were positive learning outcomes from these sessions, there was also considerable confusion. To a large extent this involved issues of control and varying interpretations of the process. A decision was made to limit the involvement of advisors in this regard. Subsequently, the process was more self-contained within the NRTC and proceeded through the dissemination of guidelines and examples, and informal discussions. This was, however, significantly limited by language problems. The Director of the NRTC and one member of the research team were fluent in English while the others had moderate to fair comprehension abilities for conversational English. As emphasis was placed on the team's own interpretation and application of the methodology and techniques within the normal working situation which included their other responsibilities, this was not as serious a problem as it might otherwise have been. The language barrier also served to delimit the extent to which I could interfere and this enabled the team to take more responsibility for conducting the research. Language, concerning both materials and facilitators, was an issue that needed to be addressed.

As the research progressed, the research team, adopted a similar relationship with the co-researchers in Krok Phra District. Their constraints were the limits of their authority under the decision to follow standard working procedures. The segregation of levels in the transfer of technology process, with the exception of the District and *Tambol* levels which worked together on project activities, was seen to have a significant effect on the transfer of technology to the important THC-village interface. The adoption of techniques became attenuated as they were transferred from one group to another. One limitation in this regard was the reluctance of the research team to keep process notes on how the activities were being conducted. They were disinclined to report their interpretations of or questions about of events for further discussion. Information management was, however, already a problem and so the recording of further data should be considered against the practicality of such an effort.

The overall transfer process from myself to the research team followed a laissez-faire approach because of the limitations on close and immediate interaction between myself and the team, the decision to limit my control of the process, and because of a general lack of certainty about how the study should undertaken. It was a mutual learning process throughout. The sensitivity to outside influence was one indication of the tenuous nature of this process. It should be considered, however, how this can be evaluated in the long versus the short term. Certainly, as the summary review indicated, there were not remarkable changes occurring as outcomes of the process thus far undertaken. However, given that much of the SSM process was not actually undertaken according to the constituent rules, this can not as yet be considered as a weakness of the methodology but rather more likely a weakness of the transfer of the methodology coupled with the limited time involved. While the focus in the literature on SSM was on changes occurring as an outcome of the process, in this case the focus was more on changes that occurred, or not, in undertaking the process. Given that the identified problem situation

involved the difficulties of operationalizing a similar problem-solving methodology, this is an appropriate focus for continued learning. The attending issues are further discussed in the following section.

CONCLUSIONS

The study entailed a single cycle of the SSM process with a number of limitations on the undertaking of the methodology and its techniques and on the transfer of the technology into the District setting. This limited application was not adequate for any firm conclusions to be drawn concerning the research questions posed at the onset of the study. The questions remain valid and the methodology demonstrated appropriateness to the extent that that can be determined under these limited circumstances. However, a general conclusion from the study was that the transfer of the technology (methodology and techniques) rather than the methodology itself is the primary consideration. The conclusions and recommendations, therefore, were made, in terms of the research questions, with this overarching theme in mind.

Question 1

The first question asked how the Soft Systems Methodology and its techniques could be adapted to the community-based District problem-solving setting. The assumption was made that SSM was an appropriate methodology because of the common concerns for problem solving as development, participation, learning and empowerment, and the management of the change process. There was no apparent reason to question that assumption. Given the inherent flexibility of the methodology and the overall positive progress made in its adaptation and adoption, the initial process outcomes were encouraging. What was experienced as constraints, moreover, were considered areas that were amenable to adaptation and adoption

within a realistic time frame. It is an unfortunate characteristic of health development approaches that, for various reasons, the time frame for making significant changes of this nature is wholly unrealistic given their nature. This is perhaps exacerbated by the tendency to introduce new methodologies and techniques in atypical circumstances involving major and unsustainable commitments of resources. That this project was undertaken within normal working conditions is very informative about the real constraints on attempting cooperative participatory programs for development.

Another related major conclusion concerning the adaptation of the methodology was that, if control over the operationalization of the process is to be given over by the consultant to those in a given situation, then the processes of adaptation and adoption—the transfer of the technology—must be a primary feature of the program. It was expected at the outset of this research that there would be, at least, a complete execution of the recommended techniques in each stage of the methodology to serve as a basis for determining their appropriateness. With control given to the research associates, this did not take place. It made for a very messy situation. However, it also provided, I believe, a much firmer and richer basis for pursuing the methodology further as a joint learning experience for those involved. This was based on an insight gained from the experience.

That insight was that it was not appropriate to view SSM as content for input into a situation. It should, rather, be viewed as a process for gradual mutual learning. Having made decisions during their execution of the process which may have been inappropriate according to my expectations, the team was, nonetheless, thereafter in a position of much greater awareness about what did or did not occur and, therefore, was in a position to make further decisions about how to improve upon the initial outcomes in the future. That would not have happened if there was a more direct and controlled application of a set of prepared techniques. It appeared to

me that what was or was not accepted by the team may have had more to do with who was making the decisions rather than what was involved. The issue of control was a significant one at all levels of the research process and was seen as an underlying issue in all of the four main themes of analysis. These themes were not adequately addressed by the research process as far as it went but could be seen as broad areas for consideration as the process continued.

Moreover, it seems fitting that this approach be adopted given the learning experience that Checkland and his associates underwent in developing the methodology. While the cultural and other differences in settings may have been important in determining how the methodology should be adapted, it seems more important that this question be answered in process rather than content terms. Checkland's 1990 publication supports this view (Checkland, 1990). The major insight that Checkland offered based on further applications of SSM in various settings was that the SSM process can also usefully be used for reflecting on a problem improvement process as a means for learning about the situation. He emphasizes the need for consideration of the sociocultural environment in which SSM is applied. Another modification in the subsequent publication is a loosening of the rules for applying SSM in response to the variability of situations in which it may be employed. Development of the methodology and techniques would require repeated applications in varying settings for comparative purposes.

Question 2

The process of transfer was found to be the critical factor in adapting SSM for this setting. As was suggested above, this was the area deserving the greatest consideration. The situation was such that the introduction of SSM as a problem-

solving process was undertaken by myself, an outsider to the health services. This had some significant effects on the process with regards to the possibility of maintaining a normal working situation. It was also an important consideration in terms of the process itself which is intensely interactive among those involved. There is also an issue of control which is related to the discussion above concerning how the process is adapted to the local situation. As the SSM technique was unfamiliar to the Thai public health officials as well as to the academics involved, I was put in the position of "owning" the technique. Although I was committed to giving the research associates control over the process, their lack of access to the technique which was exacerbated by the lack of material or other alternative resources meant that I, in fact, retained a large degree of implicit control. This may have been an underlying reason for some of the resistance to some of the techniques suggested.

The technology transfer process was not well anticipated as there was no specifically relevant experience nor models to apply. An attempt was made to employ training/learning techniques that were as appropriate as possible. However, one key feature of these techniques—ones involving dialogue and practice—is their dependence on good communication and human relations among those involved. This suggests that there would be a need to create a greater pool of expertise among the local academic and government sectors whereby there would be an opportunity to explore the use of SSM further. Another limitation in this regard was the separation of the training activities between the different levels. This was perhaps necessary because of the lack of certainty about how the transfer process was to be undertaken, but the lack of integration among the different levels was probably quite significant in determining how well the process was transferred, especially in terms of control.

Question 3

The implications of this research for public health practice can only be drawn to a limited extent because of the preliminary nature of what was achieved during the single cycle of the methodology. What did appear to be the most significant implication of the research process was the difficulty of overcoming biases against learning and research methods and techniques of the type used extensively in SSM. This was not so much the case among the research team, but there were some apparent difficulties among more senior members of the government service and academics. There has been a long tradition of using basic science methodologies and this extends to both theory and practice. While there have been significant changes in Thailand in terms of the development of PHC, there are still difficulties in resolving conflicts between the philosophy and the normal practices in development education and practice. There is an important relationship between development, empowerment and learning that requires methodologies and techniques that can address all relevant issues in a problem solving process.

IMPLICATIONS

The extent to which there was success in achieving any improvement in the problem solving process in Krok Phra is questionable. The extent to which there was information for the description of a improved model of problem solving was even more doubtful. There was very much a feeling among those involved that there was a need to continue the process further if there was to be any real positive outcomes form the project. There was even a sense of an ethical responsibility having engaged people in the process. This feeling was shared among the team members and there have already been discussions as to how to continue the project. The Director of the NRTC has made a commitment to adapt SSM for the Community PHC Center project that was being introduced under the seventh development plan. Confirmation of

this possibility was made by the Chief of the Technical Section of the OPHC in Bangkok. Among the local officials who were involved, there was no specific feedback other than the stated expectation by the District Health Officer that he would like to continue the process and expand it to cover all THCs in the District.

The formative feedback provided by the team at the closure of the project that had been funded under the 1990-91 research program was not processed further at the time. The team was unable to continue their study in order to receive feedback form the co-researchers involved. It was decided that, when plans were made to continue the project, it would then be an appropriate time to use such information as a basis for further learning. Thus the continuation of the project would be a cooperative effort based on mutual learning.

The further development of the problem-solving process through SSM should be undertaken on a basis of consideration of the outcomes of the previous effort. The research team has already made some general recommendations which, as originally intended, should form the basis for a more detailed and in-depth review of the process and outcomes. Additional feedback from others involved should be undertaken as previously planned by the team when there is available time. The commitment of time for the project must be considered by the team in order that a realistic and appropriate period is made available for these purposes for all stages of the process. With the past experience to use as a guide, these estimations of time should be more manageable. The development of the project would also be enhanced if responsibility for facilitating the research was assumed by a local, Thai-speaking who was normally working in the locality. This would require more formal and well-developed guidelines for a continuous training process. All of these recommendations would be applied to the further development of the Community PHC Center project in the coming year.

APPENDIX A: BMN ELEMENTS AND INDICATORS

BMN Elements	Indicators
I. People have adequate and hygienic food intake	1. Children from birth up to 5 years are not under-nourished and there is no malnourishment which is detrimental to health. 2. Children aged from 5 to 14 years receive all required nutrients. 3. Pregnant women have correct and sufficient food in order that children at birth will not weigh less than 3,000 grams.
II. People have appropriate housing and environments.	4. Housing materials are of at least 5 years durability. 5. Households and their surroundings are maintained in an orderly and hygienic manner. 6. There are hygienic latrines for households. 7. Households have clean and sufficient drinking water for the whole year (2 liters/person/day)

III. People have access to basic social services required for life and occupation.	8. Children under 1 year of age receive vaccinations against Tuberculosis, Diphtheria, Tetanus, Poliomyelitis, Measles, 9. Children of elementary school age receive compulsory education. 10. Children at the age of elementary school receive vaccination against Tuberculosis, Diphtheria, Tetanus, and Typhoid. 11. People aged 14-50 years are literate. 12. Households receive information on occupations, health and hygiene, civil law, and news at least once a month. 13. Pregnant women receive ante-natal care. 14. Pregnant women receive delivery services and post-natal care.
IV. People are secure in their property and lives.	15. There is security.
V. People produce and acquire food efficiently.	16. Households cultivate rotation crops or soil conservation crops. 17. Households use fertilizer to improve soil and to increase production. 18. Households have the means to protect against and eliminate plant pests. 19. Household shave protection against animal epidemics. 20. Households use seeds and breeding stocks that are officially promoted.
VI. Families practice family planning	21. Married couples have no more than 2 children and are capable of using birth control services as desired.

VII. People participate in the development of personal and community way of life.	22. Householders are members of organized mutual assistance groups. 23. Villagers participate in self-development. 24. Villagers participate in the conservation of public properties that are built by the state and the community 25. Villagers participate in the conservation of their cultural heritage. 26. Villagers participate in the conservation of natural resources. 27. Individuals use their voting rights according to democratic principles. 28. The Village Committee is, by itself, capable of planning, implementing and sustaining development.
VII. People have spiritual development.	29. There is togetherness and generosity among the villagers. 30. Householders perform religious activities at least once a month. 31. Householders do not gamble and are not addicted to drugs or alcohol. 32. Householders do not spend excessively for traditional activities.

APPENDIX B: BMN DATA SURVEY FORMS

Examples of Indicators and their Measurement

Appendix B.1 Family BMN 1 Data Survey Form

Question	Answer		Additional
	Section 1	Section 2	Explanation
2. Is the interior and vicinity of this house kept according *to all of the following criteria* :- a. **O** a garbage disposal system: such as a container to take garbage for burying, burning, or making fertilizer b. **O** a sewage disposal system so that there is no stagnant water c. **O** Covers available for drinking water storage. d. **O** no puddles or disposed materials that could be a breeding place for mosquitos e. **O** (only for houses with domestic animals) animals' disposal is cleaned after. *House Interior* f. **O** House supplies are kept in an orderly manner g. **O** Kitchen supplies are kept n an orderly manner and food is kept hygienically h. **O** Safe storage of dangerous substances such as pesticides, medications, etc. i. **O** Safe storage of household supplies such as knives, axes, guns, etc.	2. **O** all (Question 'e' needs no answer if the house does not keep domestic animals	2. **O** not all	Please walk around the house and its vicinity and survey in accordance with each question.
3. Is there a water-flush latrine in this house	3. **O** yes	3. **O** no	

Appendix B.2 Village BMN 2 Data Survey Form

Quality of Life Indicator	BMN Data of the Village		Sources
5. Houses and their vicinity are maintained in an orderly and hygienic manner.	5. a. Number of houses in the village _____ b. Number of houses and their surroundings maintained in an orderly and hygienic manner _____ Percentage (b/a X 100) = _____	74 77 /_/_/_/_/	Village Committee BMN 1: #2
6. Households have hygienic latrines.	6. a. Number of houses in the village _____ b. Number of houses that have hygienic latrines _____ Percentage (b/a X 100) = _____	78 81 /_/_/_/_/	Village Committee BMN 1: #3

Appendix B.3 Village BMN Evaluation Form

Village BMN	1986 Criteria (percentage)	Survey Result (percentage)	BMN Evaluation	
			Meeting Criteria	Not Meeting Criteria
***Element 2** (partial): People have appropriate housing and environments.*				
5. Households and their surroundings are maintained in an orderly and hygienic manner.	30%	---	---	---
6. There are hygienic latrines for households.	50%	---	---	---

APPENDIX C: RESEARCH TEAM ROLES AND RESPONSIBILITIES

Advisors (Ministry of Public Health [MoPH], Mahidol University [MU]):
Dr. Somsong Rugpao (Director, Office of Primary Health Care, MoPH)
Mr. Thavisak Svetsreni (Lecturer, Institute for Population and Social Research, MU)
Dr. Nirat Imamee (Lecturer, Faculty of Public Health, MU)
Mr. Chanin Chareonkul (Lecturer, Faculty of Public Health, MU)

Consultant
Mr. Stephen King (Exchange Research Scholar, University of Hawaii)

Principal Investigator[1]
Mr. Panyawat Santiwet (Director, NRTC)

Research Team
Ms. Siripon Sintunang (Project supervisor, OPHC, MoPH)
Ms. Kamalahpon Seradee (left for further studies in May 1991)
Mr. Paisan Jiansirijinda
Ms. Ononong Direkbusarakom
Mr. Mongkol Sribang
Mr. Chalee Junathganbantit
Ms. Phensree Thepahwuth
Mr. Uthit Jitngern (joined in June 1991)

Internal Affairs Coordinator: Mr. Chalee
Responsibilities: a. monitor progress, b. maintain files, c. coordinate with PI/Advisors/team/local people, d. administration, e. keep progress report.

External Affairs Coordinator: Mr. Paisan
Responsibilities: a. coordinate with communities (make appointments), b. coordinate with District and Tambol heath personnel, c. coordinate with villagers

Financial Manager: Ms. Ononong

Research Group A (Tambol A)
Mr. Mongkol (Group Leader*), Mr. Chalee, Ms. Pensri,

Research Group B (Tambol B)
Ms. Ononong (group Leader*), Mr. Paisan, Ms. Siripon, Mr. Uthit

*Responsibilities of Group Leaders: a. to arrange support and supplies, b. coordinate with THCs.

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[1]In the formal research proposal, Dr. Somgsong Rugpao, Director of the Office of Primary Health Care, MoPH, was named as the Principal Investigator in keeping with the normal practice for internal research projects. In the actual conduct of the research, Mr. Panyawat was the *de facto* P.I.

APPENDIX D INTERVIEW GUIDELINES

.In-depth Interview Schedules - General Information

1. Community Organization (for Village Committee (VC) members, cluster chiefs, health volunteers)
   — what type of committee /organizations/groups do you have?
   — what is their composition, representation in the community?
   — what are the activities of each organization/group, how are they conducted?
   — how is the cooperation within the group, are there any informal leaders, who?
   — what activities, projects have been implemented, who initiated them, who participated in them?
   — when and how were the projects/activities started, what were the results how did it affect the solution of common problems?
   — how is the acceptance of the VC, how is the village-government and the government-government (intersectoral) cooperation)?

2. Community Organization (for leaders of/those involved in activities/projects)
   — what are the projects?
   — who initiated, involved?
   — when/how did it start?
   — what were the results, how did it affect the solution of common problems
   — how is the acceptance of the VC, why, what do you think?
   — how is the cooperation within the community, village-to-government, government-to-government?

3. Expectations for the future (for villagers)
   — what are the present problems, how can they be solved (especially regarding activities not yet started),
   — what are your expectations, needs, what do you hope for and how can it feasibly be done?

4. Method of Working (for THWs)
   — how are activities initiated, how are problems identified and selected?
   — what have been the results of past project implementation, what is the present situation (especially community participation), what are the results, why success or failure?
   — how has the cooperation of villagers been (especially with officers at the THCs and other sectors)?
   — how do you feel about the support/cooperation of the DHC and of other development sectors?

In-depth Interview Schedule for Basic Minimum Needs Indicators (for VC members, VHWs)

a. Do you have faith in the reliability/validity of the BMN indicators?
   i. if no, why?
      — what about the techniques?
      — do they reveal village problems?
      — are the results useful?
   ii. if yes, why?

b. Are they used?
   i. if no, why?
      — what about the techniques?
      — do they reveal village problems?
      — are the results useful?
   ii. if used:
      — who uses them?
      — are the problems revealed?
      — how are they used?

c. Do the villagers participate in the process?
   i. if no:
      — why?
      — have you ever tried to get them participate?
   ii. if yes:
      — how do they participate?
      — who participates?
      — what are the steps in the process?

d. How are the BMN forms completed, what is the whole process?

In-depth Interview on BMN Indicators for THWs, VC members

1. Observations were made during the implementation of the BMN survey for 1991.

2. Interview:

    a. What do you think about the use of BMN in 1991?
        — the method of surveying?
        — the survey forms?

    b. What do you think of the usefulness of the BMN indicators?
        — Can it identify problems?

    c. How can the BMN be useful?
        — The data/the process?

    d. How do you know about the problem areas from the BMN data?
        — How is it useful?

    e. What are the steps in applying the results of the BMN in a participatory manner?

Focus Group Discussion/In-depth Interview Schedules for Villagers

i. Schedule for Villages A and B, Tambol X

1. Name, gender, age, education, occupation, address, position.

2. What problems does your family experience?
   — How long has it been?
   — How do you think that they can be solved?

3. What are the problems of your community?
   — What is the evidence?
   — How long has it been a problem, how can it be solved?

4. What is your perception of how problem have been solved in the past?

5. What are the roles of the village committee members?

6. What are the roles of the VHVs, VHCs?

7. What is your perception of the government officers' work: the THWs, and those of the Ministries of Interior, Agriculture, Education?

8. How do you perceive of the role of the villagers in solving village problems?

9. How do you see the problems of you community in the future?

ii. Schedule for Villages C and D, Tambol Y

1. What are the problems of your community?

   — How can they be solved?
   — How does the government support the solution of these problems?

2. Participation in development:

   2.1 What are the activities where the cooperation is good/not good?
   — What are the reasons for the differences in cooperation?
   — What are the roles of the government officers, VC, villagers
   2.2 What groups are there: do they work well or not?
   — Why?
   — What are the roles of the government officers?
   2.3 Voluntary groups:
   — What about the VHVs and VHCs?
   — What about the cooperation of government officers?
   2.4 Village Committee:

— How do they work?
— How do they disseminate information: among themselves, to village leaders to villagers?
— What about the support from the government officers/THWs?

3. Development of the Tambol 5-year Plan/Special development fund (109 million Baht/Nakhon Sawan Province):

3.1 Are they based on the use of BMN indicators?
3.2 Which sectors most use such data?
3.2 What is the system of data collection?

APPENDIX E SUMMARY OF SITUATION DESCRIPTION

I. Krok Phra District Health Center

Krok Phra District is located about twenty kilometers from Nakhon Sawan City. It is primarily a plains area, through which the Chaopraya River runs (north-to-south nearly along the eastern border [eastern border is defined by the Friendship Highway]), with hilly areas running north-to-south along the western border. The total area is 185,746 *rai* (1 *rai* = 0.4 acre) of which 60% is used for rice farming, 17% for other agriculture, and 23% is hilly.

Krok Phra District consists of nine Tambols, sixty-one villages and two Sanitation Areas (self-governing municipalities): Krok Phra and Bang Phra Mung. There are a total of 6,220 households and a population of 28,872 people of which 80% are involved in agriculture and 15% are laborers.

Health services consist of a ten-bed community (District) hospital at Krok Phra which directly serves eight villages. There is one District Health Center (DHC) and eight Tambol Health Centers (THCs). The DHC is responsible for the THCs which serve fifty-three villages and has six personnel. Each THC has two or three THWs. The District Health Officer (DHO) acts as a representative of the Ministry of Public Health (MoPH) at the District level responsible for: promotion, support, control, monitoring, and organization of THC activities including support for PHC activities and coordination for intersectoral rural development at the District level. The DHC has five main sections: Office Management Section, Sanitation and Disease Control Section, Health Promotion and Curative Section, Training and Supervision Section, and, Administration of THCs and Support for PHC Section.

Under the Provincial Public Health Office, the District public health activities are coordinated by the Coordinating Committee for Public Health (CCPH, *Kor Por Sor Or*) which consists of members from the Community Hospital and the DHC and which is chaired by the Community Hospital Director. The DHC's administration is divided into two zones (Zone 1 and Zone 2) each of which consist of four Tambols. Implementation of public health development follows three main programs: (1) the development activities under the National Rural Development Plan (NRDP, *Gor Chor Chor*), (2) the five-year District development plans, and, (3) specific programs according to local problems, e.g., projects for sanitary latrines, nutrition, hemorrhagic fever, as well as those for the development of public health services. Monitoring and control are carried out by supervisory visits four times per year as well as at least monthly visits by the DHO who will also meet with village leaders on occasion. Support is provided in terms of supplies, educational materials, academic information obtained during monthly meetings of CCPH, and, support, money and incentives for special projects. These special projects currently include:

1. Self-managed PHC Village Project (in 1991, five villages were involved)
2. project for latrine construction to achieve 100% coverage of District
3. ARIC project with Suwan Prachanak Hospital covering the entire District

4. Experimental project on vaccine against hepatitis in children, entire District
5. Research on factors affecting birth weight, by the Community Hospital
6. Experimental project on food: model for nutrition, by Provincial Health Promotion Center

II. Tambol Health Center, Tambol X

1. General Information:

The health center is located in Village 1, Tambol X, Krok Phra District.

2. Personnel:

There are three THWs: Mrs. D. (Public Health Worker, Level 4, Head of the Center, 4 years experience), Mr. S. (Public Health Worker, Level 2, 2 years experience), and Mrs. S. (31 years old, Home Visitor, temporary worker [not a government official). The latter two are a married couple. The delegation of responsibilities among these workers is as follows:

Mrs. D., Head of Center
— administration
— improvement of health facilities
— curative services
— health information (reporting and health records)
— member of Tambol intersectoral committee (TCSC)
— mental heath
— dental health
— responsible for villages 2 and 5

Mr S.
— sanitation
— Communicable Disease Control
— responsible for villages 1 and 6

Mrs. S.,
— maternal and child health
— school health
— expanded Program of Immunization
— nutrition
— responsible for villages 3 and 4

3. Team-work of the Center's Personnel:

Individually, they are not aware of other villages or activities that are not under their own responsibility. Before starting any project, the personnel collect information and call a meeting with the villagers to propose the project, to ask for cooperation and to test the preparedness of the community. Usually they ask village leaders. In routine work, they usually follow regular plans (those assigned by the District) and do not initiate any projects of their own. Most time is devoted to service and to visiting villages.

4. Methods of Working with the Communities:

They do not follow a regular plan for visits, they usually go when there is a a specific task or problem, e.g. to give vaccinations to dogs, to meet with VHWs for an activity such as nutrition survey, or to motivate villagers to build latrines. Usually they visit in the company of the DHO and members of the VC (for authority). For the latrine project—which is currently being promoted—they will order materials for villagers if they accept the proposal to build one. Sometimes, however, the villagers just walk away because they are fed up with the project.

5. THWs Opinions of Villages

a. Village A:

Households are quite scattered but there is good cooperation among the villagers, they have respect for their leaders.

Village B:

The households of this village are also quite scattered but to call a meeting or training session is quite difficult and the people have to be forced to attend. They do not have much respect for the headman who is not strong. The people do not give latrine construction priority. The THWs still have ten sets of latrines which have not been collected. People do not construct the latrines because they do not have the money and because they want to do it properly. If the people do not perceive of the benefit, utility, or usefulness of something, they will not cooperate. But, if they do perceive a benefit, they are willing to participate.

6. THWs Views of BMN

Surveys forms 1 and 2 are done by the VHWs, Form 2 being done with government officers. Form 3 is done by the government officers (TCSC). BMN Forms 2 and 3 are kept by the Community Development Officer (Ministry of Interior). If there are a small number of households in the village, they will check the information with individual households, but, if there are a large number of households, they do not check. The THWs feel that the information is not reliable because the VC do not fully understand BMN and they do not do surveys but simply use "recall". Also, some of the information is sensitive (village relations, morality) and the VC and villagers think it will look bad for the village if they report the truth.

7. Use of BMN

Regarding the use of BMN data, the THWs think that the data are mostly used by the CD officers. Health information from the data is used to motivate villagers to see that their village has not achieved the standards; e.g. latrines and water jars. This is consistent with what the villagers have told the research team. Some villagers do not know about BMN. When asked if somebody had come to do a survey, they said yes. When probed about what information was asked, they said that they were asked about latrines, water, animals, population. When asked about the purpose of the survey, some said that it was to find out what the village lacked. Similar responses were given by the VHWs and VC members. The THWs also said that the information was mostly

used at higher levels. They said that they use some of the information for health planning, such as that for family planning, but not all.

8. Opinions of THWs Regarding Village Problems: Village A

a. Public Health Problems:
- —lack of sufficient drinking water
- — diarrheal diseases
- — raining animals under the house
- — self-medication/use of "quack" doctors
- — malnutrition
- — lack of knowledge about the use of insecticides
- — low coverage of rabies vaccine

b. Insufficient Communication:
- — village located far from THC
- — households widely scattered
- — village covers a large area
- — village broadcasting tower does not reach all households

c. Lack of Water for Irrigation:
- — low productivity of rice farming
- — migration during dry season

d. Community Participation:
- — temporary migration
- — do not perceive the importance of projects

9. Opinions of THWs Regarding Village Problems: Village B

a. Health Problems:
- — insufficient potable drinking water
- — diarrheal diseases
- — raising animals in the household
- — self-treatment, using "cocktail" drugs from the drug store, patronizing "quack" doctors
- — construction and use of latrines

b. Communication Problems:
- — village is far from THC
- — households widely scattered
- — large area of village

c. Community Participation:
- — village headman is not well-accepted
- — VC is not strong

— VHWs do not represent the entire area
— poverty

d. Conflict in Land Usage:
— there is a conflict between rice farmers and cattle rearers over community land

10. Problems in Working in the THC

a. With Villages:
— VCs do not cooperate very well
— villagers do not cooperate very well, they do not perceive the usefulness of projects, e.g., they do not attend meetings

b. With Other Sectors:
— other sectors' officers do not cooperate well

11. Ideal Working Situation for THC

A. Villagers

A.1 Good cooperation: village leader should be well-accepted by the villagers; the VC members should know their roles and functions, should be more devoted to community work rather than their own interests.

A.2 Good economic status: there should be enough water for irrigation throughout the year; supplementary occupations during the dry season; there should be good organization among occupational groups; marketing facilities.

B. Support from DHC

B.1 Financial support

B.2 Technical support: educational materials; help in solving problems of THC activities; participate in village activities which the THWs can not do; continuously supervise the THC and villages.

C. Other Sectors

C.1 Cooperate in planning and implementing projects from the initial stages.

C.2 Support the work of the THC according to their roles and responsibilities.

C.3 Regularly go to work on-site.

III. *Village A, Tambol X,*

1. Communication:

A sixteen-kilometer road, built under the Rural Employment Generation Project (REGP, *Ror Por Chor*), consisting of thirteen kilometers of dirt road and three kilometers of paved road connects the village with the District center. Within the village, all are dirt roads.

2. Settlement:

There are altogether 120 households (HH) in this village arranged in line and cluster settlements extending two kilometers. The village is divided into three clusters: Cluster 1, located along the new dirt road consists of 40 HH; Cluster 2, off this road, is arranged in a cluster and consists of 15 HH; Cluster 3, which runs along an internal village road, consists of 47 HH.

3. Population:

There are a total of 489 people (245 males, 244 females) of which 224 (46%) are adults of the ages between eighteen and fifty years.

4. Education:

Most of the people have completed or are currently attending compulsory schooling. Altogether 379 people have completed compulsory schooling but can not go on to secondary education. Currently, there are fifty-four students in primary school (*Por.* 1-6), three students are attending secondary school (*Mor.* 1-6), and two have gone on to a post-secondary education. The entire population between the ages of fourteen and fifty can read and write.

5. Economic Status:

The majority of villagers are farmers. While 23 HH in Clusters 2 and 3 can produce two crops per year because of a near-by pond, others in those cluster and those in Cluster 1 can only produce a single crop. Eighteen households do not have enough land for farming and must rent from others. During the past year, the average yield was 300 kilogram./*rai.* During the dry season, a considerable number of people look for work in local sugar cane fields or in other provinces (59% HH). Most of the hired laborers are skilled—carpenters, masons—and get about 40 Baht/day.

6. Public Facilities:

There are two temples in the village, one having a school which most of the children attend. The children from Cluster 1 go to a neighboring village school because it is closer.

7. Sources of Water:

There is one natural source (pond) and two built under the REGP. The underground water is too salty for use.

8. Health Status:

Of the ten newborns of the past year, 61% were over 3000 grams while their immunization coverage is 90%. The nutritional status of under-fives is 23% with 1st degree malnutrition and none with 2nd or 3rd degree malnutrition. During the past two years, the common diseases found among the fourteen-and-under age group were: dental/oral health problems (35 cases), dysentery (8 cases), and food poisoning (6 cases). The most common diseases found among the fifteen-and-over age group were: dysentery (15 cases) and food poisoning (13 cases). There are 79% of HH with sanitary latrines and 96% of HH with potable water supply (2 liters/person/day).

9. Social Organization:

A. Village Committee

The village headman was elected in 1985. His house is located in Cluster 1 and is quite far from other households. Usually the village committee meets on the 7th of every month at a local temple which indicates a good interest in the dissemination of information from the District/Tambol. A meeting is not held if there is no agenda or problem. Usually there are THWs and Interior Ministry officers attending.

The village committee consists of:

1. Village headman, Chairman
2. Assistant Headman
3. Assistant headman, Knowledgeable person (usually a village elder)
4. Member for education/culture
5. Member for public health
6. Member for social welfare
7. Vice Chairman
8. Member for finance, Secretary
9. Member for security
10. Knowledgeable person

The villagers elect the members of the village committee who are then assigned their positions by the Headman according to their skills. Some positions are difficult to fill because nobody wants them.

B. VHWs

There are eight volunteers including two VHVs (both men)and six VHCs (all women). The main activities are nutritional surveillance of children, sanitary surveillance of latrines and water jars, keeping reports on pregnant women and

newborns for the THWs, and to provide information and advice on: infant nutrition, sanitary latrines, water jars, ill persons to go to the health center, and follow-up of non-compliance with immunization.

C. Community Groups and Organizations

1. Housewives Group. Their aim is to assist the community in activities of the community, school, temple; especially food preparation. The group was initiated by the Community Development (CD) worker (MoI).

2. Savings Group. Their aim is to collect money from group members every month for saving. Deposits are collected by the responsible member and given to the CD worker who banks it in the group's account. The group was initiated by the CD worker.

3. Agricultural Cooperative Group. Members can borrow money for agricultural purposes without assets but must be guaranteed by another member.

4. Agriculture and Cooperatives Bank (under the Ministry of Agriculture and Cooperatives). Members can borrow money but must have assets as security. Members must be selected by the Bank. There are more members of this group than the cooperative because approval of loans is quicker and easier.

5. Cow Bank. This group was initiated by the Animal Husbandry Division (Ministry of Agriculture and Cooperatives) worker. Farmers receive pregnant cows and the first-born must be returned to the Ministry, the remaining calves go to the common herd of the group, there is no individual ownership. Members share the profits.

6. Drug Cooperative. Established in 1984, it has drugs available for sale but since most people go to the health center and these drugs are quite expensive, there have been no dividends for the members so they let the local grocery shop owner run the drug coop.

7. Cooperation among villagers. There is good cooperation among the villagers and the VC as indicated by a good attendance at monthly meetings and there are no obvious conflicts.

10. Community Participation:

1. When asked about the use of BMN, some people do not know what it is. Villagers reported that people came to do a survey but they did not know what for, while others said no one came to do a survey at their house. Some thought that maybe it was to determine the number of livestock. The completion of BMN 1 was undertake mainly by health volunteers but none of the VC members participated. The processing of BMN 2 and 3 was also done by the health volunteers as well as THC and Tambol CD workers but the Tambol Education and Agriculture workers did not participate, nor did the village headman.

2. Village projects. The VC members ask the villagers during the meetings but usually discussions and decisions are made by the VC members themselves and then they make their proposals to the Tambol Council.

3. Problem solving. The main reported problem is water for agriculture. When asked how to solve the problem, the villagers had no ideas. They are digging irrigation canals but if there is no rain, there is no water.

11. Development Projects during the Past Year:

a. The village received money from the Provincial Development Budget and Rural Employment Generation Project (1989-90) to build a dirt road and to dig ponds in the village.

b. Among the villagers themselves, they have established an association of water users for agriculture and also a village reading place.

c. A latrine construction project has been established using funds from the Tambol Sanitary Fund which people can borrow and pay back.

12. Community Problems:

a. There is a lack of water for drinking and for household use and, because there is not enough, they must also rely on water from the pond.

b. There is a lack of water for agriculture as they rely mainly on rain water, although some groups can use water from a local pond and so can have two crops a year.

c. Some villagers have no land and they have to rent.

d. There is unemployment, especially after the harvesting season when they have to search for work, often in other provinces.

IV. Village B, Tambol X

1. Communication:

There are two routes to the village from the District center, both of which are a distance of about twelve kilometers of which approximately eight kilometers are paved and four kilometers are all-weather dirt roads (the two roads intersect in the village). There are daily bus services to the District and to the provincial capital.

2. Settlement:

The households (HH) are arranged in cluster form with three main clusters: Cluster 1 (15 HH) is located near one of the local (dirt) roads, Cluster 2 (24 HH) is located on the same road near a large pond, and Cluster 3 (46 HH) includes the village headman's house and is located on the alternative local road. There are a total of 85 HH with a population of 402 people (189 males, 213 females) of which the majority (213) are between the ages of 15 and 50 years old.

3. Education:

There is no school in this village and children must commute to a school located at a near-by temple. The majority of adults have completed compulsory primary education which is level 4 (*Por* 4) for older adults and level 7 (*Por* 7) for younger adults. There is a public reading center located near the headman's house as a source of information and knowledge and which is also used for village meetings.

4. Religion:

The majority of the population is Buddhist. Those living in each of the three clusters go to different temples, for Clusters 1 and 3, these are located in other villages.

5. Economic Status:

The main occupations are: agriculture (88 HH/95%) and animal husbandry (11 HH/13%). Most people are considered to have a good level of income as compared with neighboring villages and virtually none are unemployed during the dry season. Some (17 HH/20%) need to look for work outside the village during the dry season.

6. Water:

There is one large pond, one small pond, three water holes (dug with the support of the Rural Employment Generation Program) and one public deep well in the village.

7. Health Status:

During the past three years, there have been two births, both were over 3,000 grams and have received 100% immunization. Of the children under five years old, 90% are under the nutritional surveillance program and, of these, 55% are normal, 25% have 1st degree malnutrition, and 20% have 2nd degree malnutrition. During the past two years, the common diseases found among youths up to the age of fourteen years are caries and oral diseases (24 cases) and food poisoning (4 cases). Diseases commonly found among adults over the age of fourteen are dysentery (10 cases) and food poisoning (8 cases).

8. Sanitation:

In the village, 76% have sanitary latrines and 95% have potable water supply throughout the year (2 liters/person/day).

9. Social Organization:

a. Village Committee. The village committee consists of ten persons including the headman, a vice headman, two assistants to the headman, a treasurer, and a 'knowledgeable person' (usually a village elder), and four regular members. This village committee was elected in 1989 and is scheduled to conduct regular meetings with villagers on the 6th of every month. However, due to the distances and other inconveniences such as lost work time/earnings (due to both the actual meetings and associated public works), as well as conflicts between Clusters 1 and 3, meetings are not always held or some villagers are not willing to attend.

b. VHWs. There are five volunteers in the village: two VHVs (both men)and three VHCs (one man and two women). The most common activities of the health volunteers is the surveillance of children's weight and assisting the work of the government PH workers, i.e., data collection, dog vaccination (rabies), promotion of the latrine construction campaign, etc. One of the main activities of the volunteers is to conduct the BMN survey with the village committee.

10. Problem Situation of Village B:

From the interviews, data collection for BMN can achieve 100% coverage but in this process individual householders do not know in which items they are deficient from the standard or need to improve. This leads to the lack of continuity in the BMN process, lack of learning about problems, and no planning for solutions. Since the distance between clusters and households is considerable, there is difficulty on meeting more than once a year and so the dissemination of information from the District/Tambol by the headman must be made from house-to-house by the assistant headmen.

Development activities which gather people together are for cleanliness and for tree-planting on the King's Birthday (5th December). The major problem of governance is that the headman can not get the cooperation of the villagers because of the leadership style. Also, the headman has his own business so he pays less attention to public activities. The opinion of the villagers and VC members about working together with government officers is that they feel that government officers working in the village can not really help the villagers to solve their problems. And, even more than that, they feel that the work that the government officers need from them wastes their time and their income. When the people come to meet the government officers or to participate in work, the villagers do not get any incentive.

The village is quite a dry area and the underground water is quite salty. They have to rely on rain water only for rice farming. The pond is at a low level and they can not draw the water to use. For household use, there is only the pond which is not clean enough. The big jars (large locally-made brick-and-mortar jars with a capacity of about 300-500 liters) are not available enough. Drinking water comes mainly from the ponds. So the basic problem is lack of water. That's why the people do not want the latrines. The Public Health officers try to push them to realize the importance of latrines. They have used money from the community fund to buy material for the villagers to build latrines but this is not successful because villagers feel that other needs are more important and villagers want to build latrines with good quality all at one time.

V. *Tambol Health Center, Tambol Y*

1. General Information:

The Tambol Health Center (THC) is located in a village adjacent to village C, Tambol Y on the main road about seven kilometers from the District. The health center is a one-storey building raised on stilts. There are two houses for the staff in the compound which occupies an area of about 1.5 *rai* (one-half acre). The center was opened on 7 January 1982. The Center is responsible for seven villages occupying a total area of 31 km^2 with a total population of 2,337 (1,166 males, 1,171 females) living in 520 households.

2. Personnel:

There are three THWs: Mr. N. (33 years old, Public Health Worker, Level 3, and Head of the Center), Miss W. (31 years old, Public Health Worker, Level 3), and Mrs. S. (31 years old, Home Visitor, temporary worker [not a government official). The delegation of responsibilities among these workers is as follows:

Mr. N., Head of Center
— administration
— control and evaluation
— improvement of health facilities
— health information
— coordination
— sanitation
— Communicable Disease Control
— Epidemiology
— Expanded Program of Immunization (EPI)
— training
— supervision
— Primary Health Care
— health training
— responsible for villages 1,5,6, and 7

Miss W.
— preparation of reports
— medical supply, support of drug cooperatives
— mental health
— maternal and child health
— school health
— nutrition
— health education
— curative services
— Quality of Life development
— responsible for villages 2,3, and 4

Mrs. S.,

— family planning

3. Team-work of the Center's Personnel:

In their work, they have a positive attitude towards and accept others' opinions. Even though the head of the center is known as "a drinker", his colleagues have a positive attitude towards him. As, Miss W. said, "He drinks during the night-time but he can still work in the morning." They usually discuss their work among themselves but Mrs. S. is a listener mainly and does not know much about the details of work; she said, "I don't know of any special projects, I can't explain what I don't know." During this research, there has been no evidence of conflict and we have observed that they are quite cooperative. Even though they have divided the areas into individual responsibilities, they cooperate with each other. The DHO reports that this team has quite good team-work and that they can take care of each other. His comment about the head of the center was that, "He has good abilities, you have to know how to use them."

4. Methods of Working with the Communities:

The overall picture is that these personnel understand well the ways of life of the people under their responsibility. Mr. N. said his philosophy was' "Go to the people, create a sense of closeness and try to search for natural leaders." During our work, it was observed that Mr. N. works well with and is quite close to the people. Regarding his work with local leaders, Mr. N. said, "The *Kamnan* (Tambol Chief) is quite a good man but not effective in mobilizing the people to do anything. What Mr. N. does is to pass feedback to the *Kamnan* through others so that he will be able to consider things himself (without direct confrontation). Now, Mr. N. reports, the *Kamnan* is improving himself. Villagers report that Mr. N. lets them think for themselves, "Dr. N.lets us think for ourselves and then provides information or data later. Like the issue of latrines, he tells us what we should do about the problem"[2] Concerning their working with village health volunteers, the THWs still lead discussions and the volunteers do not know much about their roles. The volunteers report that the villagers feel very close to the THWs. They also report that the government workers, especially health anc community development workers, come to work with the villagers quite often. There are no criticisms or complaints as the health workers are well accepted. One of the VHCs, however, reported that, "{another VHV} is the (favorite of the THW), I think that we should all be treated the same".

5. Special Projects:

a. Nutrition project. The aim of this project is to develop a model for training and work of the village health volunteers. They have divided the villages into small clusters and the VHWs are quite cooperative. Formerly, the THWs had to do all the work and now the VHWs cooperate quite well.

b. Establishment of a volunteers' club.

2Public health workers at THCs are usually called "Doctor" by the local people.

c. Special training in Acute Respiratory Infection in Children (ARIC) with Suanphracharak Hospital with follow-up, in 1990.

d. Establishment of Elderly Club.

— The headman of Village D said, "Ordinarily, the elderly receive free medical care but we set up the club so that the health personnel will have more concern for the elderly. They collect 120 Baht as an application fee."

— A village volunteer from Village D said, "The villagers are quite interested in the project."

VI. *Village C, Tambol Y*

1. General Information:

Village C, one of seven villages in Tambol Y, occupies an area of 4,578 *rai* which is primarily a plains area and is located eight kilometers (seven kilometers of paved road, one kilometer of dirt road) from the District.Village C has a population of 490 persons living in 125 households. The main occupations are agriculture and manual labor. Forty households do not have any land of their own and forty-five households have to rent additional land for agriculture. During the dry seasons, fifty-five people from forty-four households seek manual labor in other provinces. The average annual income (mainly from agriculture) is approximately 7,000 Baht per family per year.

2. Social Facilities:

The village has one primary school, a public reading room, and a village broadcasting tower. The majority of the population have finished compulsory education and can read and write. There is one temple in the village. There is electricity but no piped water. Water supplies are drawn from public wells of which there are three deep and three shallow wells. About half of the households have sanitary latrines (51%) and adequate drinking water (53%).

3. Health Status:

The majority of the population suffers from gastrointestinal and respiratory diseases. Of the children up to and including five years old, 10.5% have 1st degree malnutrition while none has more serious malnutrition.

4. Governance:

Village C is divided into five clusters; each cluster has a Head of Cluster who sits on the Village Committee. The village Committee has nine members including: the Chairman who is also the Kamnan (Tambol Chief), an Assistant Kamnan for Security and Protection, an Assistant Kamnan for Governance, a Secretary, an Assistant Secretary, and four regular members.

5. Village Development Groups:

a. Health Volunteers Group. There is one VHV (a man) and nine VHCs (three men, six women).

b. Poultry Raising Group. This group was established in 1985 with thirty members. In the first phase of the project, operations went quite smoothly and it was used to train people from other villages. However, after the responsible government personnel left the area, the group had a lot of problems with implementation and

administration. The replacement personnel could not continue the work and the group deteriorated.

c. Savings group. This group was established in May 1985 with nineteen members. They collect money from members to be placed in a bank account which currently has a balance of 19,060 Baht.

d. Housewives Group. This group was established in November 1986 with twenty-five members. Their main occupation is to assist in religious activities and to help develop village facilities.

6. Main Development Activities:

1974-76	— Budget was received from the Rural Economy Generation Project to build small irrigation canals and roads in the village.
1982-	— Drug cooperative was initiated with 102 members but the project has deteriorated due to the lack of attention to business by the administrator.
1986-	— Elders Day ceremony to show respect for the elderly which continues to the present.
1986-	— Village religious ceremonies which continue regularly to the present
1986-	— Building big water jars project was established where villagers can borrow money to build water-collection jars.

7. Overall Village Development Situation

Looking form the national perspective, national development is oriented towards industrialization, especially in the cities. That has directly affected labor in the small town/rural areas. Because of the low productivity of agriculture, some numbers migrate to the big cities. For those who remain in the village, they have less participation in development and the introduction of a cash economy also affects the participation of people in the village. People are more willing to participate by paying/contributing/ investing cash that by personal labor. People feel that it is quite common and accepted to pay money as a form of participation.

A. Concerning participation:

The opinion of villagers is that the forms of participation are changing from labor by household. People do not always appreciate the importance of cooperative development or participation. They aren't willing to sacrifice and do not have as much interest in helping each other because that have to work and earn their living. Sometimes they are willing to pay money instead of giving labor. A VHV commented, "That is because its a matter of 'mouth and stomach' (daily needs)". The villagers still realize the importance of participation. Even though the problems of earning are quite serious, they still participate in development activities. The form of participation has changed to cash but at least they are still willing to share. The Kamnan said, "The leaders must be strong , they should share work and be well-united as a good example to villagers". An Assistant Kamnan added, "They have to not only talk but also do something".

B. Concerning voluntarism in the village:

It appears that the characteristics of the villagers has changed considerably, the people spend more time for their families. The labor force is reduced during the dry season. Each government sector, respectively, has its own development projects to improve the living standard of the people. So these projects place an even greater burden on the people than before and the Kamnan added, "(the government officers) have created many voluntary groups but with only a few willing people". Therefore, they must be responsible for many roles. A VHV said, "We couldn't find enough people to be on all these committees, so most are the same people and when they are more involved, they have less time for themselves." When a volunteer group has been established, they should do some development work for the village. Concerning the village health workers (VHVs, VHCs), a VHC said, "The people still feel that they are helpful" and the Assistant Kamnan added "There is respect for them". A VHV said, "Recently, the Mr. N. advised us to establish an Elderly Group for the Tambol". This indicates that, if the health personnel help to establish a voluntary group and if they follow up the activities of the group, this will lead to the development of the quality of life of the people in the future.

C. Concerning development in the future:

It is well accepted that agricultural production is dependant on the the environment, especially sources of water. But that has been a problem for some time. A VHC said, "If we have water, we will not be poor." There are several problems for which the people can not make decisions or solve for themselves because of a lack of knowledge or organization. A VHC said, "We want the government to give advice and provide information. But the villagers have to decide what is appropriate for the area." A VHC commented that, "The government officers have given advice but it can help solve only certain problems". A VHC said, "Some problems, however, the villagers couldn't follow the advice government officers give because the officers don't know the area well."

D. Concerning the collection and use of BMN data:

See the description of the case of Village D, below, as the situation is the same. That description reads as follows:

(At the present time in the community development process, they try to use the BMN indicators to assess the problems in terms of the areas that do not meet the standards so that the projects introduced by the government will be specific to the needs of the people. So the BMN process would start with the villagers at the family level to let them understand BMN—what are they, what are they for, and why they need to have a survey. Also, we need to have feedback so that the people will know what does not meet the standards and whether or not that represents the problem of the village. That means that the people need to know about their own living situation and that of the village. Whether or not this process has achieved these expectations, since the first introduction of the BMN concept at the village level, may be indicated by the following statement: "The Village Committee, the VHWs, they delegate among themselves to do the survey. Those who really conduct the survey are those who are

willing to work for the community. Some think the objective is just to know what is in the village. Some think of the objective as for the development and the latrine construction. But some of the Village Committee have joined the survey but they really do not know what the survey is for. This also questions whether the ordinary villagers who are not involved in BMN will know about it or not, and whether or not different areas of the village have met the standards or not. This is a clear indication that it is not a continuing process, as the ideal suggests, at the village level.)

VII. *Village D,Tambol Y*

1. General Information:

Village D is one of the seven villages of Tambol Y. It consists of an area of 2,719 *rai*, most of which is plains area used for agriculture. The village is located at a distance of about five kilometers from the District, connected by paved road. The population is 421 people from eighty-five families living in eighty-three households. The majority of the people are farmers and laborers. Approximately twelve families do not have land of their own and another eighteen families with insufficient land who have to rent land. During the dry season, about sixty people from thirty families go to search for work in nearby provinces. The average income from agricultural work is approximately 15,000 Baht per family per year.

2. Social Facilities:

There are no schools in this village so children have to go to other villages. There is a village broadcasting tower and one public reading center. The majority of the population have finished their compulsory education and can read and write. There are no religious facilities in the village and so villagers go to near-by temples. There is electricity but no piped water. They have to rely on four public deep wells and two ponds. While only 47% of the households have a sanitary latrine, 83% have access to sufficient potable water.

3. Health Status:

The major problems of morbidity are gastrointestinal and respiratory diseases. Of the population aged five years and under, there are 13% with 1st degree malnutrition and none with 2nd or 3rd degree malnutrition.

4. Governance:

The village is divided into three clusters, each of which is under the responsibility of a head of cluster who sits on the village committee. The village committee consists of a chairman (headman), two Assistant Headmen, a Secretary, a Knowledgeable Person, and four other members.

5. Development Groups:

a. Health Volunteers. There is one VHV (a woman) and six VHCs (two men and four women).

b. Housewives Group. This group was established in November, 1986 with seventeen members. Their activities mostly involve supporting religious activities and important ceremonies, and the development of community facilities.

c. Savings Group. This group was established in December, 1986 with eighteen members. There is a monthly contribution of 190 Baht paid by each member and a current balance of 10,630 Baht.

d. Drug Cooperative. This group was established in 1982 with forty-four members. The coop sells essential drugs and medical supplies at regular prices and is well accepted by the poor who are members of the group.

6. Past Development Activities:

1974-75	— A budget was received from the government to build a three-kilometer road to the village.
1976	— A budget was received from the Rural Economic Generation Project to dig an irrigation canal but this canal has since collapsed and is no longer in use.
1985	— The village started a big water jar campaign for the storage of drinking water. These jars were constructed by village craftsmen and the people have to pay for the jar monthly or yearly.
1987	— The villagers dug a deep well but the water is too salty and can not be used
1987	— The villagers and the temple joined together to build a village hall as a meeting place and a reading room. The villagers provided labor and money and the temple provided the wood.
1988	— The agricultural extension worker and the Village Committee constructed a rice silo for storage and lending. At present, there is no rice but there is cash.
1989	— The chief Buddhist monk bought a mini bus to take the school children to the District. The parents pay 70 Baht per month per child. The bus is driven by the village headman who is not paid.
1990	— The village dug a deep well.
1991	— The villagers dug another deep well.
	— The Chief monk organized rice planting for the temple where the villagers willingly gave labor without pay.

7. General Development Situation: Villagers Opinions

Up to the year 1976, the development of he village usually depended on the intervention of the government and this was mainly aimed at infrastructure development. There were several development projects, i.e., road construction, especially that for connection to the Tambol. This was to serve the policy of increasing agricultural production. There was also a project to improve irrigation. Since 1977, the pattern of development has changed where they are now looking more at the needs at the village and Tambol level. The local level has increased their participation while the government has accepted more views from the local people in relation to development. Several projects now make more use of local human resources, trying to look for willing and devoted people to help each other. This is the starting point for each government sector to establish volunteer/voluntary

organizations which act as the extension of the government sectors. There is more integration between the government and private sectors. Villagers are more involved in determining the model for development of their own, but still these models are largely determined by the policy of the government. This could, however, be accepted as a good starting point.

A. The main constraints on development:

The main constraint on development is the socio-economic status of the people. The development policy of the country is geared towards industrialization. Increments in the per capita income at the macro level has an inevitable effect on the poor, especially those at the village and Tambol levels. Even though there are increases in incomes in the nation, the poor are still poor. Such increases did not make any contribution to increasing the economic status of the farmers, to the contrary, they have become poorer. The productivity of the soil is now lower, the yield has been reduced. The farmers are facing problems of natural disasters, pests, and diseases and they need to struggle more to survive. The labor force in the village has to out-migrate. The voluntary groups that the government tries to initiate for development exist only in name and are not very effective. Also, this situation is found in other villages in the area.

B. Concerning cooperation/participation among villagers:

At the present time, the cooperation among the villagers is decreasing because of economic pressure. Some of the villagers have paid money instead of sharing labor for village development activities. The cooperation among villagers is not as strong as it was before. The only activities that are certain to have more participation are those on the King's Birthday and those related to religious ceremonies such as those for blessing the village. The village Knowledgeable Person said, "If we look at development activities introduced by the government sector, some people are saying that all the jobs are "dumped" on the village headman. Sometimes they do not want them but they have to comply because they are ordered and that makes the Village Committee uneasy". This statement is a good indication that the villagers are still passive in the participation process and this might damage the processes of participation that they already have. But if connected with religious ceremonies or with persons in whom they have confidence, that activity will still be able to attract participation from the villagers, e.g., growing rice in the temple without pay.

C. Concerning voluntary groups:

The people feel that those initiated with the cooperation of the villagers and the government officers are very useful in development work because human resources are declining as farmers have to be involved in making a living. It is quite difficult to find people who are willing to devote his/herself to community activities. Once such people are identified, government officers want them to get involved in many activities. As a VHV said, "The longer we live, the more work we have to do." As the Knowledgeable Person said, "When they have training groups for volunteers at the beginning, it's quite active. But, if the government officers don't follow the activities up, then they will slowly fade away and finally exist in name only with no activities at all. The volunteers are all gone; for example, the youth group, housewives group, CD

volunteers, and VHWs." This may be because there are no activities. A VHC commented, "They do their own work but, if there are activities, they may still cooperate well. Because, I'm still in the village and I still have that responsibility, that position." The potential of the village is there and ready to help each other in the development of the other people in the village. The government officers who initiate this group have to follow up closely and continuously. A VHV said, "The follow-up will make those volunteers and their work more related to each other."

Concerning recruitment of volunteers, there are two methods. The first, is appointment by the village headman/committee. The Knowledgeable Person said, "The committee will screen the people, look at their work habits—whether they can get along or whether they are competent to do the work" A VHV added, We look for what cooperation they can give, their willingness to join, and their readiness to take action." The Knowledgeable Person said, "It doesn't matter who they are, if if they can follow instructions without argument, I will appoint that one. If I can ask them to do something and they can learn, I will appoint that one." A VHC said, "Sometimes we get a person who, after they are appointed, they didn't work well. The Knowledgeable Person said, "We have to warn them, but if we can not stand it, we have to change the person." The other method is that, as the Assistant Headman said, "The villagers select the volunteers". There is not much age difference among the volunteers. If the leaders of the groups are younger than the others, there will be a problem. The younger ones are reluctant to give orders to their elders. A VHV said, "Those who are health volunteers should be of the same age. If the VHC is older than the VHV, there will be a problem when they work."

D. Concerning the government officers from the four main development sectors:

Even though the development projects from the four main ministries are oriented towards the villagers and it is hoped that these projects will help the people to achieve QoL with the common goal of self-reliance, these development projects are mainly initiated by the government officers. By trying to get the people to work to a pre-determined project, what happens in reality is that the voluntary groups exist in name only but there is no personnel, no manpower. It will be active in the initial period but, after the training period, without follow-up, the group will then collapse. If the government officers do not keep close contact with the villagers, there will be less communication between them and the group will collapse; the problems still exist and they will become more serious. The Knowledgeable Person said, "The agricultural extension worker comes to help the farmers but they really can not do anything. They do not wait to see the results of the program. So the villagers do not understand why the agriculture or animal husbandry officers initiate the groups." The villagers understand the roles of the health workers more than the others. A VHV commented, 'The THW is the only one who meets with the people and lets them know what is going on." This indicates that the problems of the village still exist and the villagers want to solve the problems of their families and community, are ready to cooperate and still expect to get advice from the government officers but the government officers themselves do not let the people know about the situation.

E. Concerning the Future:

Because of the economic pressure, the people think less about the community but they now realize more about their own problems. Cash has played an important role in daily living of the people. And, they need to make some modifications of the development models of the past. We have to look at various forms of participation, not just shared labor. Some may pay money. A VHV said, "We can not leave the development activities solely to the villagers, but, if the government carries on every development project, it is also quite impossible".

This might indicate that, if development is carried out solely by either the government or the villagers, it will not succeed. So the alternative may be that the government should provide supplies, equipment and some seed money. The villagers may contribute labor, money or whatever they can contribute. But this requires very strong leadership—such as that found in the situation where the villagers contributed their labor to grow rice for the temple—especially those in the Village Committee. When they are selected, they have to play an active role and they have to be the leaders and an example for the people; especially, to be a model of devotion for the community. Then the government needs to have close follow-up after the initiation of a project and training of the volunteers. Even when the project has terminated, there are has to be close follow-up because the villagers and the organizations are still in the village and they still face the daily problems of living.

F. Concerning the BMN Process and Development:

At the present time in the community development process, they try to use the BMN indicators to assess the problems in terms of the areas that do not meet the standards so that the projects introduced by the government will be specific to the needs of the people. So the BMN process would start with the villagers at the family level to let them understand BMN—what are they, what are they for, and why they need to have a survey. Also, we need to have feedback so that the people will know what does not meet the standards and whether or not that represents the problem of the village. That means that the people need to know about their own living situation and that of the village. Whether or not this process has achieved these expectations, since the first introduction of the BMN concept at the village level, may be indicated by the following statement by the Assistant Headman A: "The Village Committee, the VHWs, they delegate among themselves to do the survey". Those who really conduct the survey are those who are willing to work for the community. Some think the objective is "just to know what is in the village" (Assistant Headman B). Some think of the objective as "for the development and the latrine construction" (Assistant Headman A). But some of the Village Committee have joined the survey but they really do not know what the survey is for. This also questions whether the ordinary villagers who are not involved in BMN will know about it or not, and whether or not different areas of the village have met the standards or not. This is a clear indication that it is not a continuing process, as the ideal suggests, at the village level.

APPENDIX F SUMMARY REVIEW OF IMPROVEMENT PLANS

A. Plans at the DHC level

The DHC has implemented a problem-solving process on the basis of the agreement made between officers of the DHC and the two THCs to solve the identified problems, as follows:

1. Human Resource Development

1.1 Morale and Motivation. For problem solving they are going to use brainstorming to identify problems and their solutions in the DHC and in working with the THCs instead of issuing directives as in the past.

1.2 Visiting THCs. Every month the DHO will visit the THCs to have an informal discussion. They will let the THWs be responsible for problem solving and only intercede if there is an expressed need for assistance.

1.3/1.4 Distribution of resources/Fairness. There are no concrete solutions as yet.

2. Working System

2.1 Administration of personnel at THCs. The DHC can manage under the current system, as authorized by the Provincial Chief Medical Officer, by assigning THWs to appropriate locations. Regarding the assignment of new personnel in order to achieve the quota, there are still no replacements.

2.2 Management of manpower/work in THCs. The delegation of work and manpower has already been undertake No new action. New personnel are expected but none have assigned.

2.3 In-service education/training. There are already monthly meetings and periodic conferences.

2.4 Awareness of problems of THCs. There is monitoring of such problems in monthly meetings.

2.5 Decentralization. This follows from the bureaucratic system; e.g., if a THW wants to send a letter to the District, he/she must submit it for signature to the THC Chief.

3. Health Information System

3.1 Information collection. Work has been delegated to respective sections and will follow existing system. No action planned.

3.2 Communication by radio. There is no concrete solution but now aware of the technical/implementation problems; e.g., antennas not high enough, training on the use of the radio, especially at DHC.

4. Supervision.

4.1 Regular/continuous. Here, supervision follows established pattern, i.e., at least four times per month, and this target has been covered. Will use existing model of supervision areas and frequency.

4.2 Approaches to problem solving, follow-up, and monitoring by Province and District not the same. Krok Phra DHC has its own concept which is to give freedom in working to each THC (to allow them their own identity) but DHC will monitor according to the objectives and targets of each project.

4.3 Supervisors should have more education/skills than THWs. This will be solved by encouraging the DHWs to study in more detail before going to supervise THCs, and the DHC will provide more technical information and papers to prepare for supervision.

5. Coordination with other sectors.

5.1 Have at administrative level but not operational level. At the implementation level, there is coordination among the TCSC (officers of the four main development Ministries) at the formal level of the District Development Committee and at the informal level at meetings. It is expected that, after the BMN and NRDP assessments are made (by the end of June), there will be an opportunity to find out how to coordinate.

5.2 Coordination with Provincial Chief Medical Office and Regional Hospital for elderly program. They have already coordinated by proposing the elderly project, so problem should be lessened.

B. Plans for Work between DHC and THCs (combined).

The co-researchers from the DHC and THCs have met to consider the gaps together. In doing so the two lists of gaps identified by the respective THCs were combined into one. The research team did not follow-up that meeting and so the presentation was made for that purpose during this meeting, as follows:

1. Location and Services.

1.1 Improvement of services. This is quite difficult, especially in the case of Tambol X, as the facilities there are very old.

1.2 Fence. This has been considered (for THC, Tambol X) and it was agreed that a fence would create a sense of separation between the center and the local population; it would not be welcoming.

1.3 Water/electricity services. Both THCs have adequate water supply for daily use, and they are in a dry area so it would be difficult to improve.

1.4 Service facilities. The THC facilities are old (especially THC, Tambol X) and some of the equipment is broken but it is difficult to order new equipment because of the government procurement procedures.

Medicinal Herb garden. Very difficult because of the lack of water.

2. Management of manpower.

2.1 Additional personnel. Having PH technical officers or dental hygienists at the THCs would be quite difficult given the (Ministry's) manpower structure.

3. Promotion of village development activities.

3.1 Village data collection and analysis and plan formulation. At present, villagers have low capability, but there are indications of a trend of increasing perceptiveness after the THWs visit with them.

3.2 implementation of basic PHC services:

a. growth monitoring — VHWs capable but THWs must monitor,
b. use of HH drugs — now they are using less as they follow the advertisements but there is evidence that indicates that they will adopt the right behavior;
c. management of community funds — community funds can be implemented *if* the VC is capable;

3.3 Development of villagers' potentials

a. Dissemination of information — it depends of the village headman to call meetings, in some places they use the village broadcasting system instead of meetings;
b. Home visits by THWs — Re: Tambol X, now there are only two THWs (Mr. S was hospitalized by a road accident) and so it is difficult to go out of the THC.

3.4 Support from other Ministries

a. coordination — since the government officers do not have much time, coordination is difficult;
b. Tambol Information Project — with the establishment of this project, there should be more opportunities to meet, especially the CD officer.

C. Plans for Work Involving THCs and Villages[3]

In the last meeting with villagers, information collected indicates that there are no changes in the proposals except that Village B, Tambol X: villagers have proposed that the budget should be increased for digging a public well. Concerning feedback, it was mentioned that, in using the techniques of PAR with the villagers to describe their problems, there was not a clear picture as a result.

[3]The specific plans for village improvement activities are described below including the stated involvement of the THCs and others.

D. Plans for Improvements, Tambol X (Villages A and B combined)[4]

ACTIVITIES/STEPS	RESPONSIBLE PERSONS	TIME
A. Sanitary Toilet Construction 1. Survey households to determine who does not have and who wants sanitary toilet. 2. Village Committee follow-up identified households. 3. Solve the problem.	[Heads of clusters] Village Committee	1992
B. Water-storage Jar Construction 1. Survey households to determine who does not have and who wants jars. 2. Determine those who want to purchase jars. 3. Interview. 4. Order/purchase jars. 5. Sign agreement. 6. Follow-up. 7. Evaluation.	Village Committee	1992

[4]Village B originally only planned to undertake one activity, sanitary latrine construction, but following the initial planning session, there was a decision to also dig a deep well (as mentioned during the review meeting) in line with the plans made by Village A.

E. Plans for Village Improvements, Tambol Y (Villages C and D combined)

NEED (*JUSTIFICATION*)	SOLUTION	TIME	PERSON
A. Public Services			
1. No tap water/drinking water *(need clean drinking water)*	1. Construct water supply/ distribution system.	1992	THC
	2. provide water storage jars for every house using revolving fund or borrow money	1992-3	VC & VHWs
2. No street lamps or paved roads *(lights & paving to prevent accidents, provide convenient travel and reduce dust)*	1. Write a plan and proposal asking for budget from TC and contact other agency to make a proposal	1993	VC & THC
B. Information/Communication			
1. Lack of radio-telephone *(need to send messages quickly in case of accidents, emergency, infectious disease)*	1. Ask for donations from people in village 2. Use village fund to buy, ask permission, & train in use	1992	VC
2. Need public telephone *(convenient for long-distance communication)*	1. TC will inquire into possibilities	1993	TC
C. Sanitation & Environment			
1. Need full coverage of sanitary toilets for every house *(prevention of gastrointestinal diseases, for good hygiene, to prevent accidents such as snake bites)*	1. Use revolving fund with low interest 2. THC staff to ask for more budget and demonstration funds to combine with revolving fund	1992-3	VC & VHWs THWs
2. Villagers do not keep houses in good order *(to prevent pests (mosquitos, rats, etc.; to reduce filth such as from animal pens; for good mental health)*	1. Education for householders, VHWs, VC, youth	1992	THWs Cont...

D. Health 1. Lack of knowledge about self-care to promote good health including treatment, basic nursing, MCH, disease prevention, care for elderly, etc. *(villagers should be able to take care of infections; antenatal care, delivery, postnatal care; to use drugs and treatments safely and quickly; and to take care of elderly)*	1. Establish Community PHC Center	1992	VC, VHWs, & THWs
2. Villagers lack knowledge to prevent accidents and disasters *(villagers can reduce accidents and disasters in the village, reduce seriousness of problems, and can reduce death rate from accidents)*	1. Train VC, housewives, youth, VHWs in village and *Tambol* about prevention 2. THWs will follow-up and evaluate work of VHWs and VC and have continuous training (year-by-year)	1993	TC & THWs
E. Village Cooperation in Development Planning and Management 1. Leaders need information to plan to solve problems of village, and, 2. Non-use of available resources to solve problems*(Leaders need to survey completely, analyze data base to determine problem/needs of village, plan and send proposals to TC to ask for budget, and leaders can solve problems at village level)*	1. Train leaders of VC and groups to survey and analyze data to identify problems/solutions to solve problems of the community 2. Train leaders to be able to plan and propose budget well 3. TCSC follow-up and support villagers 4. Leaders set meetings quickly in response to problems to discuss solutions together 5. Train leaders to know their responsibilities and to work accordingly	1993	TCSC *Cont...*

F. Administration of Community Funds 1. Community finances divided into small, separate funds *(groups can manage funds without help from officers; can combine funds together for convenience of management; ca reduce problems that arise from small funds; having one administration will be more efficient)*	1. Train VC how to manage funds 2. Combine funds together to create central fund 3. Form central committee from all groups 4. TCSC should follow-up and give support regularly and continuously	1993	TC & TCSC

APPENDIX G: RESEARCH TEAM SUMMARY REVIEW DISCUSSION

Summary Discussion of Krok Phra Project (16 June 1992)

1. *PAR is an appropriate methodology for applied research (that involves actors in a situation) where the objectives are to take action, solve problems, or to create working models. It is significantly different from Basic Research methodologies in some respects.*

a.) *Do you feel that you fully understand: the* ***philosophy*** *("why" it is used), the* ***methodologies*** *(how it is done—the process), and the* ***techniques*** *(how it is done specifically—the actions taken in each step of the process)?*

b.) If not, which aspects do you ***need to learn more*** *about?*

PAR is a methodology which is appropriate for the appreciation of other research methodologies where the researchers are involved in the situation that they want to study. They are involved in jointly (with those in the problem situation) stating objectives, problem identification, and searching for the means to solve the problem for development activities in various aspects. The philosophy of PAR, considering its methods, is the joint research and study by the two parties involved in the research project; that means the researchers and the target population have to work harmoniously together by sitting and talking and discussing ideas, exchanging, arguing and bargaining with consideration of data and respective reasoning. Both sides have to open their minds and accept the opinions of others in order to work together to state objectives, to look for what needs to be solved/improved, to develop consensus, , to solve problems and to evaluate as well as to be creative and innovative and to try new methods in development work.

Because of the philosophy and content of PAR, it can be considered one of the best methods because the problems of development work involve interaction between the two parties who have to work together and help each other in thinking and doing. However, Thai society has for a long time been based on the patron-client relationship. Even though there are not clear distinctions between classes, it is clear that there are barriers between bureaucrats and the people. The bureaucratic culture is related to the feudal system of the past and those who are subordinate can not argue with or make suggestions to the superiors. The subordinate of the past had to be obedient, compliant without question, and loyal to the superior and the superior had to take care of his subordinates in return. In is now no different in the bureaucracy where the lower ranks have to follow the orders and policies of the higher ranks. It is quite difficult to deviate from this norm; at the end of the year, evaluations are based on targets set and budgets allocated. Those at the lower ranks are usually passive about this pattern.

Using PAR in problem solving for development work requires participation from all sectors and levels and, therefore, people have to be open-minded so as to listen to others ideas. PAR has several sub-processes at different stages and it is a very sensitive issue how the participation is undertaken. It must progress slowly, it needs

time, and we can not control the rate of necessary changes. This is one of the difficulties of using PAR in the Thai bureaucratic system.

Processes and Methodology of PAR

The starting point of the process is the analysis of the real situation and comparison with the desirable situation, the results of which are the gaps or problems. From that will merge the possible measures to solve the problems of development work. Each step must be gradually developed. It takes some time and the time is dependent upon the situation as it occurs during the research. The researcher has to follow the situation continuously. Furthermore, the search for gaps—comparing "what is" with "what should be"—with villagers is quite difficult. Furthermore, all steps involved—from entering into the situation, discussing the problem situation, defining terms, drawing the desirable image, describing the gap, searching for consensus in the formulation of objectives, planning, and implementation—is quite difficult in terms of working with government officers from other sectors; especially those that follow the bureaucratic methods as described above.

Techniques that are Used in PAR

In the process of diffusion of knowledge, techniques and experience—both in terms of theory and practice—from those who know to those who do not know (in this case from the consultant to the project director, from the consultant to the research team, to the local level [District and Tambol level] and target population)—are as follows:

a. Training processes based on learning-by-doing. This is appropriate for trainees who have an appropriate knowledge base and an understanding of the concepts underlying the content of the training. That means that the trainees should have a similar level of basic knowledge about the underlying concepts. If they are not equal in their backgrounds, then it si quite difficult to understand the content and it then takes more time than the other types of training.

b. Brainstorming. This method involves helping each other to think about an issue and to search for alternatives from among the group.

c. Communication techniques. This is a method to help the trainee to gain new knowledge and opinions by learning about the experiences of others through improved communication.

d. Cartooning. This is another method for the diffusion of knowledge. In this method, the trainee can absorb the meaning of a graphic representation and, if the picture has a high degree of communicability, it will lead to understanding which is easily perceived, even with only a brief explanation. However, if the picture is not clear, the trainee may have a different interpretation of its meaning from those who construct it.

Within the whole process of PAR, there are several techniques that should be used as follows:

a. First Stage: Entering the Situation
— observation
— in-depth interview
— focus group discussion: by selecting village leaders, volunteers, those who are active as leaders in community activities
— brainstorming
— mind-mapping: the researchers have used this technique to conclude or to conceptualize and organize the main issues of what we have obtained from the data collection

b. Second Stage: Description of the Problem Situation
—dialogue
— conversation
— informal discussion
— explanation
— in the presentation of information we use group discussion

c. Third Stage: Defining the Issues
— group discussion to seek consensus
— brainstorming
— mind-mapping

d. Fourth Stage: Drawing the Desirable Image to Search for Gaps at all Levels
— group discussion
— imaging of situations
— brainstorming
— mind-mapping

e. Fifth Stage: Identification of Gaps (Problems)
— group discussion
— imaging of situations
— brainstorming
— mind-mapping

f. Seeking Consensus for Formulation of Objectives
— group discussion
— brainstorming
— mind-mapping

g. Planning and Implementation
— group discussion
— communication skills
— brainstorming
— mind-mapping

We have to select the appropriate technique in each stage depending on the ever-changing situation. This is based on the learning experience from participating in this project:

This is the first time that the research team have used the problem analysis process based on SSM. The researchers feel that their lack of experience in this area and the lack of textbooks, manuals, etc. on this subject in Thai made their understanding of the matters difficult despite the efforts of the consultant and Principal Investigator. There is still a lack of skills and a need to learn more. The areas which are identified as requiring more learning are as follows:

a. There is a need for more reference in Thai to facilitate learning.

b. The researchers are still not clear about the research process. We have implemented the press as we understand it but there is a need for more direct, experienced-based learning as well as for indirect learning reference-based).

c. Concerning the process as a whole, the stages and the time required, there has been some lack of continuity. The researchers are still part of the bureaucratic system and there are several limitations. If the researchers are clearer about the whole process, it might help the research team to make long-term plans for operation that will not interfere with their other missions and that will help lessen the seriousness of problems.

d. The researchers need to learn more about collecting, recording and organizing data from the field (what we call field notes and file notes).

2. *Considering the seven steps of the problem-solving process that were followed (the methodology). For each step,* ***describe the difficulties you experienceed;*** *individually, as a group (team), and in working with others in the field>*

3. *For each of these problems, describe: (a) the* ***reasons*** *why the problem occurred, and (b) how you might* ***overcome/solve*** *those problems.*

The difficulties in each step of the PAR process with differing degrees of difficulty in the seven steps are as follows:

a. Entering the Situation.

b. Description of the Problem Situation

In this step, there was little difficulty because we are used to this kind of undertaking as are the THWs who have had long experience working with the people. We are all well-informed about the situation already. The data for population, migration of the labor force, and economic, social and cultural information is relevant for the normal work of the THWs as they have been part of the situation for some time.

c. Defining the Issues

In this step, the researchers are still confused because of the lack of skills for interpretation and identification of issues.

d. Creating the Image of the Ideal

The researchers involved from the NRTC, DHC, THC, and village have problems in defining "desirable image". This seems to be dreaming which is very difficult to achieve and so we like to change the term to "desirable image" which is more understandable because the "ideal" may or may not occur but "desirable" is more understandable.

e. Identifying Gaps/Reaching Consensus/Planning and Implementation

In these three stages, the researchers have had some problems in creating a good atmosphere where people can get close to one another where people feel free to express themselves. In these three steps, the researchers have had to use different methods such as group discussion and brainstorming and the researchers are not very familiar with these techniques.

4. *Describe any **positive or negative effects** of this research on: you, individually, you as a team, the DHWs, the THWs, the VC/VHWs, or others.*

The positive impacts are as follows:

a. The researchers have been trained and have gained experience in more skills in terms of academic (theory) and experience.

b. We have gained more knowledge and experience in the process of PAR techniques to be used in qualitative research such as in-depth interviews, focus-group discussion, brainstorming, and mind-mapping.

c. We have learned that, in doing anything, the one doing it must be clear about the objectives, content and steps of work. If these are not clear, it will lead to a lack of self-confidence, and inability to do the plan which will be a waste of time.

d. The research team has applied this learning experience in developing a curriculum for a training program in PAR for Provincial- and District-level researchers.

The negative impacts are as follows:

a. There are problems because the researchers are still in the bureaucratic system and this research is out of the bureaucratic system. So the others involved have to take some time to understand the process and can not fully participate in this research project.

b. During the beginning of the project, the researchers did not have a clear understanding of the concepts, methods and the research process as a whole.

The consultant did not give the same explanation—the content was not the same each time— and so it is confusing and we had to make decisions even though we did not understand.

5. *Considering what you have described above, what* ***recommendations/changes*** *would you make for continuing this project or doing similar research in the future?*

[Question 5 was not answered]

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