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Swiss Centre for Development Cooperation
in Technology and Management

Transfer of Ownership in Water Supply and Sanitation Systems

Report on the 12th Aguasan Workshop
24-28 June, 1996

Peter Schübeler
with an afterword by Ueli Scheuermeier

Foreword

Fully in the tradition of the Aguasan Workshops, this year's central theme—"transfer of ownership"—was explored through actual case examples of water and sanitation development projects from several African and Asian countries. At the same time, an attempt was made to apply and, if needed, further adapt a conceptual tool borrowed from the management sciences. The tool is called "CATWOE", which stands for Client, Actor, Transformation, Weltanschauung, Owner, Environment. Specifically designed to deal with questions of roles and transformation processes in management systems, CATWOE promised workshop participants an innovative approach to the theme of ownership transfer.

Application of CATWOE to the case examples did not yield the expected results, however, and the workshop had to shift its approach in mid-stream. Nonetheless, the trial application of CATWOE and subsequent evolution of the Workshop produced some valuable insights and the answers to many open questions eventually emerged.

In the following report, Peter Schübeler has not only recounted the Workshop developments and thought-processes but reflected and, in some instances, elaborated on them. For participants, the report thus contains more than a useful documentation of the Workshop; it provides an opportunity for additional insights and understanding. Going beyond "proceedings" in the normal sense of the word, the report should also be accessible and comprehensible to a much wider audience.

Furthermore, the Workshop organisers requested the "resource person" for the CATWOE tool, Ueli Scheuermeier, to examine why its application to development projects met with limited success. His challenging reflections are contained in the Afterword on "Lessons learned".

The Workshop organisers extend their thanks to the authors of this report and hope that it will stimulate the reader's own thinking about the important issues of ownership transfer.

For the Aguasan Group

Karl Wehrle
SKAT

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AGUASAN Workshops

AGUASAN is an interdisciplinary work group for water and sanitation development. Individual members belong to several Swiss development and research organisations, including the Swiss Agency for Development Cooperation (SDC), Water and Sanitation in Developing Countries (SANDEC), HELVETAS and Swiss Centre for Development Cooperation in Technology and Management (SKAT). Since its formation in 1984, AGUASAN has held annual workshops in Gersau, Switzerland, bringing together project field staff, desk officers, experts and consultants for a week of exchange and reflection on selected development issues. Besides fostering a learning experience, the workshops aim to formulate conceptual tools which will be of practical use in development cooperation. A list of previous workshops is given in Annex 4.

Workshop theme and focus

At the previous workshop "watershed management" was suggested as the priority subject for AGUASAN 12. However, preparatory discussions led to the conclusion that management systems depend on the definition of rights and responsibilities, and that the issue of *ownership* is even more fundamental than that of management. With regard to water resources and water supply systems, ownership involves various relationships between water users, authorities and the resources and facilities themselves. Changes in these relationships—implying a transfer of ownership—are of central importance to water supply development. In the rural setting, ***community ownership of water supply systems is essential to user participation, and to the sustainability of these systems.***

To facilitate investigation of ownership issues, the workshop introduced a conceptual tool from the management sciences: "CATWOE", which stands for Client, Actor, Transformation, Weltanschauung, Owner, Environment. This tool applies to "soft" systems composed of diverse human actors, functions and goal seeking activities, as opposed to "hard" systems which include only technical facilities and engineering problems. Dealing explicitly with questions of ownership and transformation, CATWOE should be highly relevant to the workshop theme.

The workshop approached questions of ownership transfer through actual case experiences. Firstly, the "Participatory Integrated Development of Watersheds" (PIDOW) Project of Karnataka State, India, was taken as a reference case to introduce ownership issues and illustrate the use of CATWOE. Five further cases of rural water supply and sanitation development from as many different countries provided a rich field of experience within which participants explored alternative approaches to ownership transfer and tested the usefulness of the CATWOE tool.

Objectives

The workshop objectives, in brief, were to:

- deepen understanding of the problems and potentials of ownership transfer in water and sanitation systems through an exchange of experiences and specific professional inputs,
- test and further develop a conceptual tool which would promote understanding of how ownership transfer happens and facilitate more effective transformation processes.

Participants

Workshop participants, resource people and organisers comprised 32 professionals in water and sanitation development (see Annex 3). Moderation and animation were ensured by Tonino Zellweger and Ueli Scheuermeier.

Programme and outcome of the workshop

The programme of the five-day workshop is outlined in Annex 2. The first day's discussions served to introduce the concepts underlying the CATWOE tool and apply these in an illustrative manner to the reference case of Participative Integrated Development of Watersheds, PIDOW. On the second day, five case studies from Ghana, Sri Lanka, Cameroon, Mozambique and Lesotho were presented. In the afternoon, five work groups delimited a particular sub-system and explored roles, functions and transformation processes in each case with the aid of CATWOE.

The results of the group work, presented in plenum on day three, were quite mixed. While CATWOE led to certain insights regarding the roles and responsibilities of stakeholders, some groups felt that too much time had been spent on the tool rather than the issues; CATWOE seemed to throw up more questions than insights.

Table 1 Case studies and presentations

Cases and presentations	Location	Author
Reference case:		
PIDOW Participative Integrated Development of Watersheds	Karnataka State, India	Premkumar Dharmalingam, Mysore Resettlement and Development Agency
Work group case studies:		
GAP Ghana Water and Sewerage Corporation (GWSC) Assistance Project	34 small towns in Ghana	Peter Sackey, GWSC
SRTS Sarvodaya Rural Technical Services	Sri Lanka	Palitha Jayaweera, COSI Foundation for Technical Cooperation
Badoumven Water Supply System	Badoumven Village, Banka, West Province, Cameroon	Charles Ndifon, Helvetas, Cameroon
Cabo Delgado/Helvetas	Province of Cabo Delgado, Mosambique	Seamus Collins, Helvetas, Mosambique
Department of Rural Water Supply/Helvetas	Lesotho	Kaspar Grossenbacher, Helvetas, Lesotho
Additional presentations:		
Mvula Trust	South Africa	Piers Cross, Mvula Trust, South Africa
NGO and Government sector evolution of W&S Project Processes in Indonesia	Indonesia	Anton Soedjarwo, Yayasan Dian Desa, Yogyakarta,

The afternoon of the third day exposed participants to some fresh country air and down-to-earth technical alternatives in the form of an excursion to the Eco-centre at Schattweid.

On the fourth day, CATWOE was left to ferment in the back of participants' minds while the discussion returned to the issue of ownership and, in particular, to practical indicators of ownership. Presentation of the South African case of Mvula Trust put these issues into sharp focus. Taking the Mvula process as a point of departure, participants returned to work groups for a

comparative review of the five cases. The outcome enabled a more concrete elaboration of ownership issues and indicators.

The final day was shaped by efforts to synthesise the meaning and consequences of the previous discussions. The spirit of synthesis was strengthened by an incisive overview of the evolving public sector and NGO approaches to water and sanitation in Indonesia since 1970. Work group and plenum discussion then focused on the potentials and limits of CATWOE and the issue of ownership and its legitimisation. The session closed with an exercise aimed at identifying the topic for AGUASAN 13 (Annex 5) and an evaluation of the workshop.

Workshop evaluation

The evaluation was an informal process in which participants expressed their opinions and feelings about the workshop. Most comments revolved about three subjects: ownership, the CATWOE tool and the case inputs and workshop experience itself.

Ownership and its transfer

Participants who had expected specific indications for promoting ownership transfer came away, instead, with a deeper understanding of the multiple dimensions of ownership. It emerged not only as a legal and economic aspect, but an emotional, moral and social factor. It was apparent, furthermore, that ownership cannot be considered in isolation; it is not *the* solution to questions of sustainability or empowerment, but a crucial aspect of possible solutions.

Ownership issues were certainly not handled exhaustively, and many questions were left hanging. Most importantly, participants felt the need for better understanding of internal processes of ownership transfer and the relative importance of different aspects of ownership in particular circumstances.

CATWOE as a project management tool

CATWOE is derived from the commercial environment of management science. The application of this conceptual tool to development projects was evidently an experiment, and the results were not totally successful.

Attitudes and opinions regarding the tool seemed to trace a general curve over the five-day period. Initial mild confusion regarding its relevance

quickly turned into frustration over the difficulty of applying CATWOE terms and concepts to the cases. Occasionally, frustration was swept aside by a valuable insight—particularly with regard to institutional change and the role of donors. Out of these insights grew a certain understanding of the limits and potentials of the tool. The prevailing impression is that CATWOE is not yet ripe for use in the development context, but that it does contain potentials which warrant further work.

Case presentations and the workshop experience

The most valuable aspect of the workshop was the opportunity which it afforded to learn about eight different case experiences from the persons who are living these experiences first-hand. It was very instructive to see how similar issues arise and are dealt with in quite different circumstances. The AGUASAN innovation of inviting participants from the developing countries was greatly appreciated. Besides the excellent professional inputs, some brilliantly funny reviews brought welcome enlightenment to the proceedings.

The workshop was well organised. Participants and organisers alike were impressed by the level of involvement, and by people's capacity to deal with new situations, share a certain degree of confusion and help each other towards new understanding.

Transfer of Ownership in Water Supply and Sanitation Systems

1. Introduction to the theme

Development of water resources to meet the needs of a population for drinking water and, in some cases, agriculture, normally involves transformation at two related levels (see Figure 1). The first, ***"hardware" level***, is concerned with planning and construction of physical facilities. In the rural context, this usually means that a relatively simple technical means for accessing water sources—an open well, for example—is transformed into (or replaced by) a more complex and effective technical system for producing, storing and distributing water. Facilities for collecting, treating and disposing waste water may also be constructed.

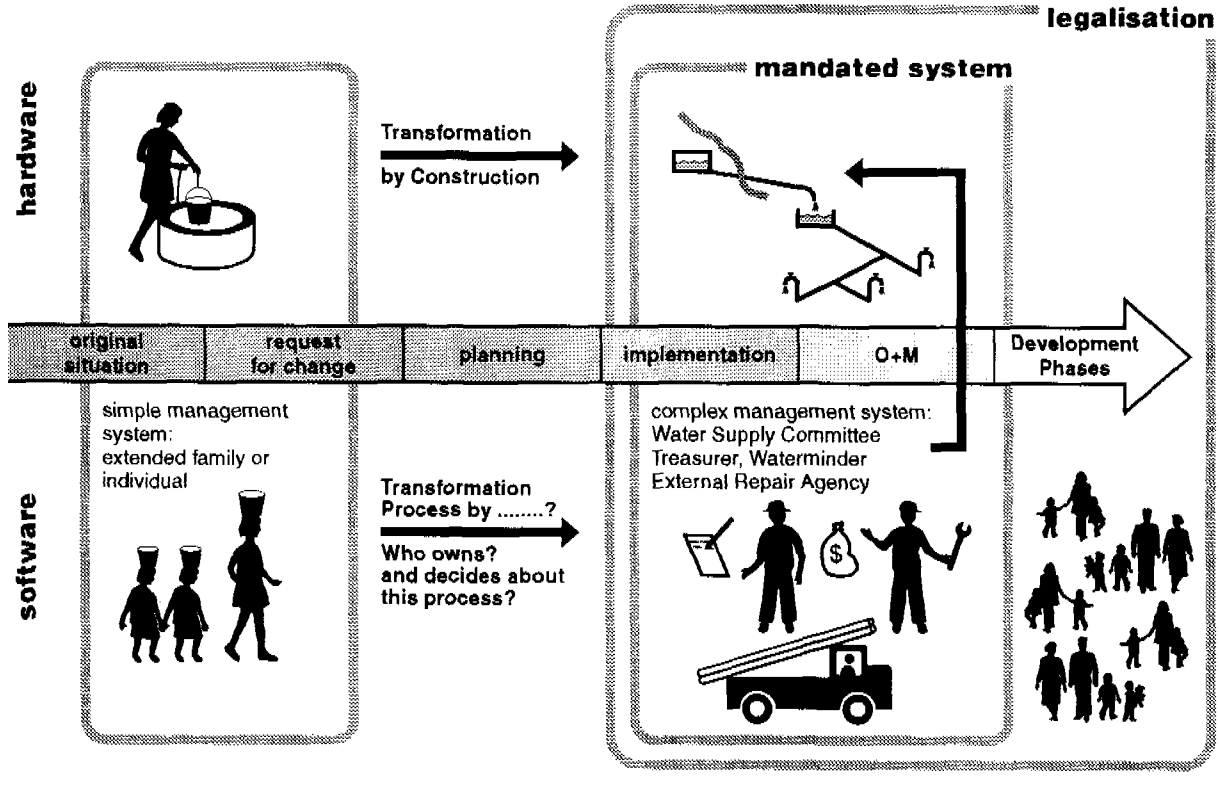
The second, ***"software" level*** concerns the management of water resources and facilities. In the initial situation, the procedures, rights and responsibilities for accessing and operating water supply systems are defined by traditional structures of family, clan and community. These apparently simple management arrangements are an integral part of the broader (actually quite complex) social system. However, the provision of more sophisticated water supply facilities gives rise to new technical and organisational requirements which cannot be met by existing traditional arrangements. Effective management calls for new roles and organisations (such as a water supply committee, treasurer, water minder, repair agency, etc.) which are capable of executing new functions (such as fee collection, cash flow management, ordering and storing materials and parts, maintenance, repair, etc.)

In most cases, the ***hardware transformation*** is accomplished fairly successfully by a development agency external to the user community. Very often, however, the ***software transformation*** is accomplished only partially, or not at all. The new assets may be handed over to an association of users or a newly established local organisation for operation, but the transfer of ownership takes place in a formal sense only; effective ownership and a functional management system fail to emerge.

There are several possible explanations for this widespread inadequacy. The time period required for successful ownership transfer—including the de-

velopment of organisational capacities—is usually longer than the physical development process, and the software is not in place when the hardware is completed. Institutional support to bridge the gap is often lacking. Many projects underestimate the complexity of the problem and the skills required for software development. Participation by the users in the planning and implementation phases, which would foster ownership, is often inadequate. ***In this light, the problem involves not just "transfer of ownership", but rather "ownership of the transformation process".***

Figure 1 Water supply system: hardware and software transformations

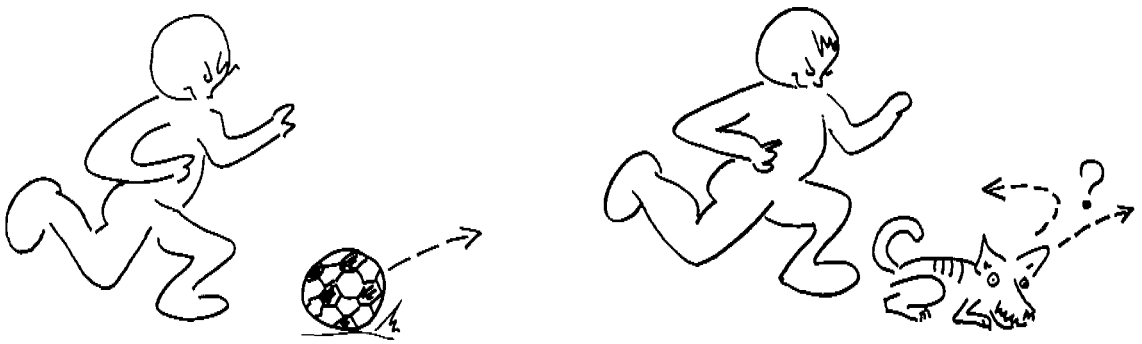


2. CATWOE: a soft system management tool

2.1 What is a "soft system"?

Water supply and sanitation systems are composed of a natural basis (watershed, aquifer, local ecosystem, etc.), technical facilities (well, reservoir, treatment plant, distribution network, etc.) *and* human components (individual users, management organisations and regulatory institutions, etc.). This complex mix of technical and human components characterises water supply systems as "soft systems", and distinguishes them from "hard" systems composed only of technical components. The difference between hard and soft systems is illustrated below: if one gives a football a swift kick, it is possible to anticipate where it will land. If one gives a similar kick to a sleeping dog, the outcome is much more difficult to predict. The dog resembles a soft system; its behaviour is complex and non-trivial.

Figure 2 Non-trivial behaviour of soft systems



Methods employed for the design and operation of hard systems—which belong to the realms of engineering, systems engineering and operations research—are seldom adequate to deal with the complexity of soft systems. In additional to technical concerns, soft system management must respect three important characteristics:

- Defining the ***objectives***—"what are we trying to achieve?", "where do we want to be?"—is itself part of the problem-solving process. It is not possible to make an exhaustive definition of objectives at the outset, as can be done, in principle, for an engineering problem.
- Management systems involve several actors with different identities and interests. It is thus important to identify the ***function of each actor*** in the system. In this regard, the soft systems approach goes beyond ZOPP

methods, which do identify objectives but do not usually distinguish the functions of different actors.

- In soft systems, it is seldom possible to say that a condition or course of action is completely right or wrong; it is more appropriate to speak of what is "***more useful or less useful***".

2.2 Defining management systems

The soft systems approach begins with a clear definition of the management system. According to the methodology developed by Peter Checkland[1] the so-called "root definition" of a management system should contain six specific elements, as represented by the mnemonic CATWOE:

Table 2 Elements of the CATWOE root definition

Client	Who is the beneficiary of the purposeful activity?
Actor	Who is actually doing the activity?
Transformation	What is the main purposeful activity in terms of input and output?
Weltanschauung	What shared view of the world makes this definition possible?
Owner	Who could stop the activity?
Environment	What constraints does the system accept as given?

The answers to these questions outline the main features of a management system. Selection of the system to be examined is quite arbitrary, however. System boundaries must not correspond to an apparent organisational entity but should be chosen in view of the purpose at hand. If overall watershed management is the main concern, for example, the relevant system may comprise an apex organisation concerned with water resources and supply in the area. By contrast, if a specific aspect of financial management is the concern, the system may be limited to a single activity within an organisation—the revenue collection function of a water users' association, for example. System definition is usually facilitated by reference to a limited geographic area.

The core of a root definition is the concept of ***transformation***. Correctly identified, a transformation comprises the single purposeful activity which best characterises the system's reason for being. As noted, transformation should be expressed in terms of a specific input and output, with care being

[1] Checkland, Peter B., "Soft Systems Methodology", in *Human Systems Management* 8, 1989, pp 273-289

taken to specify only the substance or quality which is transformed. Resources which may be required for the transformation but are not themselves part of it should be left out. Following a principle of conservation of materials and dimensions, the input must present, in some form, within the output. A concrete input always yields a concrete output, for example, and an abstract input produces an abstract output. Three definitions of a water company may illustrate this point:

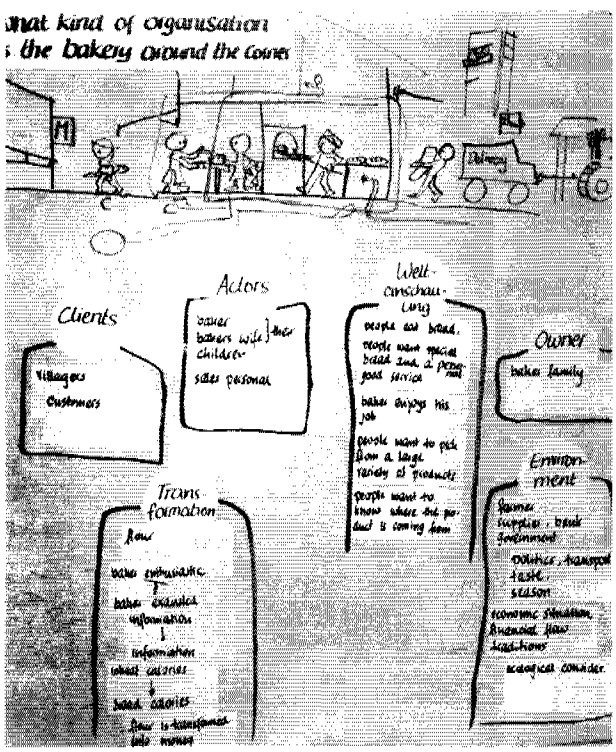
Valid definition: (concrete)	A water company is an organisation which transforms water found in the environment into drinking water, fit for human consumption.
Valid definition: (abstract)	A water company is an enterprise which transforms customers with a demand for drinking water into satisfied customers.
Invalid definition:	A water company is an organisation which transforms drinking water into satisfied customers.

The selected definition of transformation, and its degree of abstraction, depend entirely on the company's image of itself and the purpose of the inquiry.

2.3 Applying CATWOE: the bakery example

Application of CATWOE to the familiar example of the corner bakery fostered understanding of the soft systems approach and a feeling for the flexibility of the tool.

Figure 3 The corner bakery



The root definition of the bakery, shown in Table 3, identifies the main roles and reason for being of the organisation or institution. In practice, the root definition would be further elaborated as a conceptual model for analysing the functioning of the management system and designing improvements. More directly, CATWOE may serve internally as a didactic tool to deepen participants' understanding of their common purpose and differing functions within the management system.

Table 3 The corner bakery according to CATWOE

Clients	People of the village or neighbourhood; while these customers benefit from the activity, they are not actually part of the management system
Actors	The bakery is a family business and the main actors are the baker and his wife.
Transformation	A range of possible transformations were identified: From the social or psychological perspective, the bakery is a home enterprise which daily transforms a skilled baker into a tired but satisfied baker. More concretely, the bakery is a micro-industry which transforms the caloric value of wheat or other grains into edible bread.
Weltanschauung	All stakeholders believe in the value of bread produced locally employing traditional skills; Customers trust the origins and quality of the product (as opposed to the less apparent origins of supermarket bread).
Owner	The baker is owner of the system as well as its main actor. (If the mortgage were very high, the bank may be seen as the owner). In an industrialised bakery, by contrast, the owners would be quite distinct from the actors who make bread.
Environment	The environment consists of the market for raw materials, tastes and traditions of customers, economic conditions, and so forth...

3. The reference case: PIDOW

The Participatory Integrated Development of Watersheds (PIDOW) in Karnataka State, India, was presented as a reference case to introduce ownership issues and illustrate the application of CATWOE.

3.1 Project description

3.1.1 Background

The total arable land area of India is about 140 million hectares, of which about 37 million hectares is irrigated. While past increase in agricultural production has resulted mainly from the introduction of high yield varieties on irrigated lands, future production increases will have to come from rainfed areas which make up over 70% of the total agricultural land and support the most of the poor rural population.

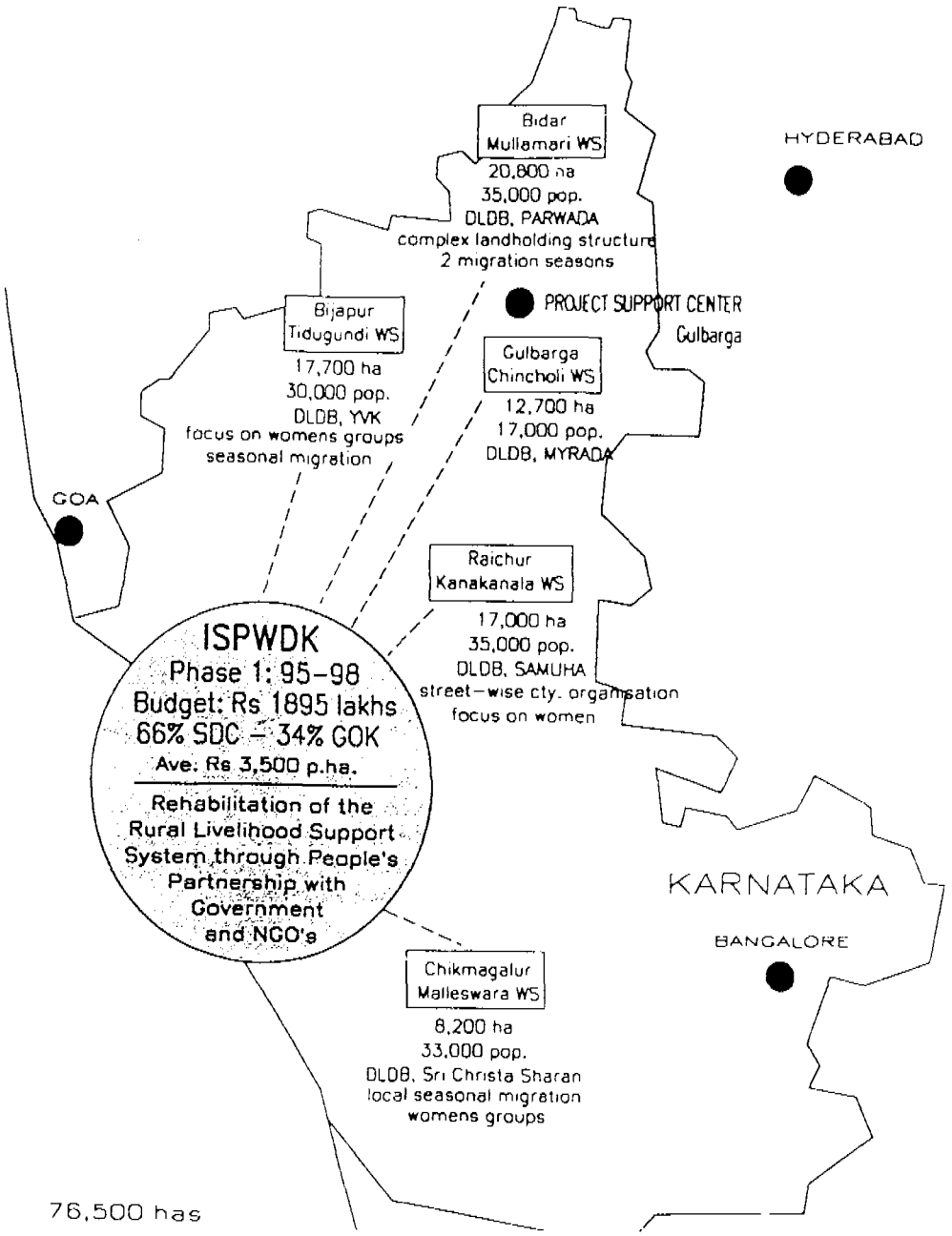
Participatory Integrated Development of Watersheds (PIDOW) is a joint undertaking of the Dry Land Development Board (DLDB), Karnataka State Government, an NGO, MYRADA, and the Swiss Agency for Development and Cooperation (SDC), to rehabilitate and develop small watersheds of 300 to 500 hectares. Employing an integrated and participatory approach, the project aims to involve rural communities as active partners in the development process.

The Indo-Swiss PIDOW Project is located in the Gulbarga District of northern Karnataka, With a population of about 60,000 people and an area 26,000 hectares, Gulbarga comprises 27 villages and 39 hamlets. The annual rainfall averages 700 mm and the soil is poor, consisting of shallow black loam in lower lands and red sandy clay loam on the slopes.

3.1.2 Role of the partners

The Dry Lands Development Board (DLDB), Karnataka State Government, is the main implementing agency responsible for physical and technical development. DLDB provides 30% of the funding. SDC provides the remaining 70% of government financial requirements, 100% of the NGO expenses and selected inputs of expertise and training. The NGO, MYRADA, is responsible for community organisation, development of the participatory planning approach, action research and training.

Figure 4 Participatory Integrated Development of Watersheds PIDOW; Indo-Swiss Project at Gulbarga



3.1.3 Project objectives and approach

The Project's overall goal is to achieve sustainability and equity in the management and use of micro-watershed resources. Specific objective are to increase productivity through appropriate soil and water management, foster the introduction of hybrid cash crops by reducing investment risks and increase the production of biomass for fuel and fodder.

The main areas of activity are soil and water conservation, dry land agriculture, forestry and horticulture. PIDOW's participatory approach is based on the traditional form of self-help termed "sangha". The main entry point activities of PIDOW self-help groups are savings and credit.

The project strategy includes specific interventions to i) build the people's awareness of problems and development potentials, ii) plan and implement physical improvements to increase agricultural productivity and iii) develop the social environment through self-help groups, watershed committees, etc. Other activities include iv) development of linkages with other institutions, government departments and banks, v) support of appropriate and innovative farming systems, vi) action research on physical and social aspects of watershed development, vii) support to innovative communication methods and information exchange and viii) promotion of policies which support these processes.

Having developed and tested the approach in five districts over a period of 10 years, PIDOW is now set for larger scale replication.

3.2 Ownership issues

A central aim of PIDOW's participatory approach is to foster people's ownership of the development process. "Ownership begins with planning" and the project takes care to involve farmers in each step of the process, from land-use assessment and problem analysis on through planning, implementation and evaluation. People's participation in implementation accounts for about 30% construction costs through contributions of labour and kind.

While ownership through participation is a straightforward aim, its realisation in conjunction with the project goals of equity and sustainability encounters numerable problems and challenges. In technical terms, for example, issues of watershed management apply to quite large geographic areas. However, an effective participatory approach requires the project to break down its unit of planning and operation into relatively small socially viable entities. Individual watershed associations have an average of only 20 farmers which join together in an apex organisation to represent a microwatershed with an area of 300 to 500 hectares and a population of about 80 farmers.

Furthermore, rural communities are not homogeneous but highly stratified in terms of wealth, power and land ownership patterns. The project's main response to this situation has been to channel entry point activities through small and socially homogeneous self-help groups. Based on positive cooperative experience in these socially viable groups, it becomes possible to approach more complex issues affecting the community at large.

Prevailing patterns of land ownership pose numerous hindrances to the project goals of equity and sustainable productivity increase. For example:

- The more productive lands in lower areas are generally owned by wealthier farmers while the less productive lands on the upper reaches belong to poorer farmers. Investments in soil improvement are more effective in the lower reaches; to achieve significant productivity increases on the upper reaches, and thus promote equity, a much higher level of investment would be required.
- Years of encroachment onto forest lands and unclear ownership status constrain rational development strategies. Farmers are reluctant to plant tree crops on the encroached land, as this might stimulate the government's interest in reclaiming the lands. Farmers are generally averse to invest in land improvement where their ownership rights are uncertain.
- Cropping patterns such as contour bunds, which increase productivity and improve ecological sustainability, are often resisted because they cut across private land boundaries; farmers fear that they will loose clear demarcation of their property. Contour bunds require close cooperation, whereas friction between neighbouring farmers is common.
- Improved water management and soil retention in the upper reaches reduces silt collection in the lower reaches. For owners of low-lying lands, however, silt is valuable as it increases the productivity of their soil.

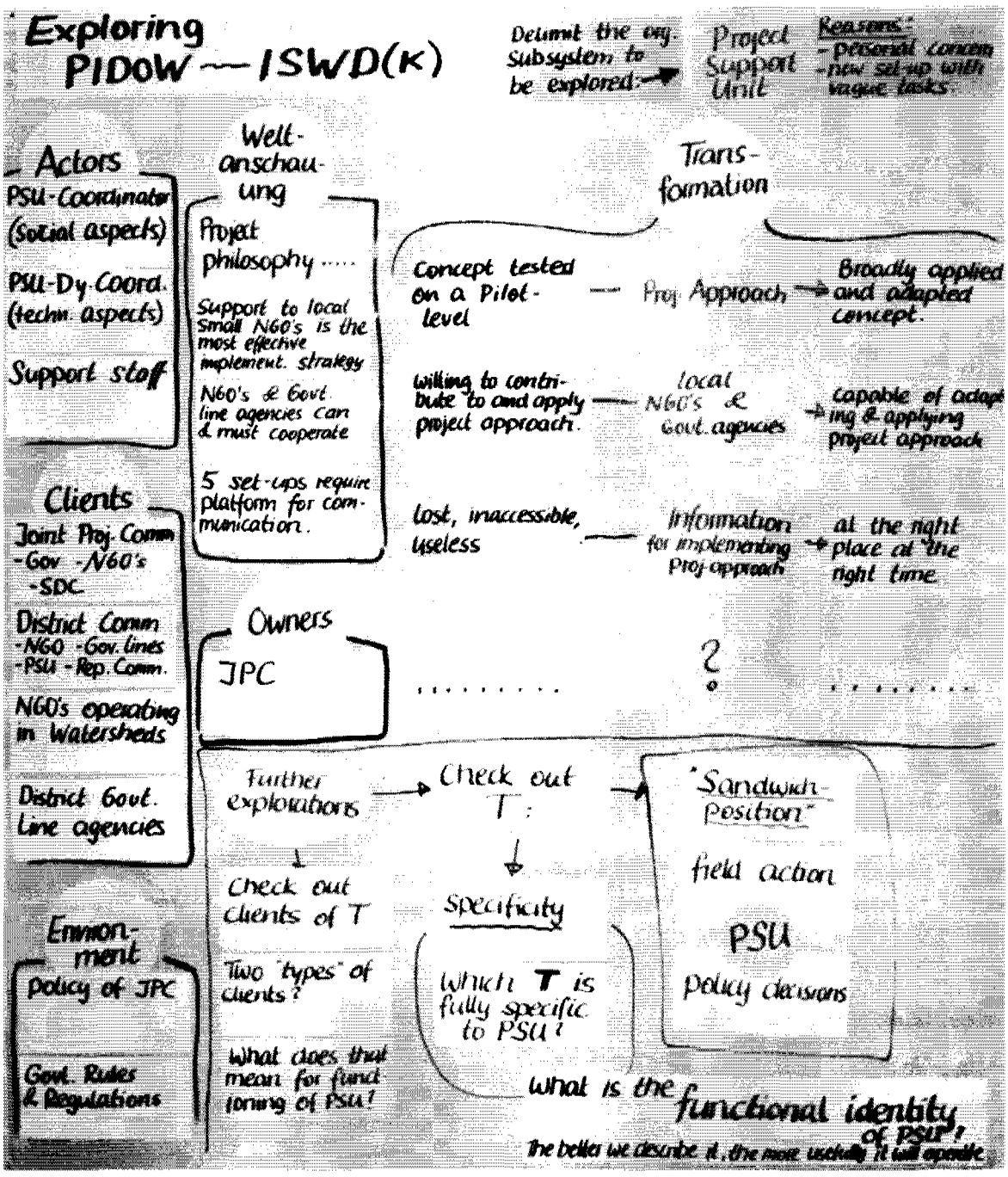
To address these and other issues, the project promotes people's awareness of the overall objectives of watershed management. Specific technical and organisational solutions are sought which recognise ownership patterns while, at the same time, promoting equity and generating win-win situations on the basis of overall productivity increases.

3.3 Application of the CATWOE tool

3.3.1 Delimiting the system

Rather than examining the entire PIDOW programme, it was decided to apply CATWOE to the Project Support Unit (PSU), a small, newly created entity within the project structure. The resource person had personal reasons for the choice: he has recently been appointed PSU coordinator, and the functions of this new unit are still somewhat unclear.

Figure 5 Exploring PIDOW with CATWOE



Organisationally, the PSU is responsible to the project's governing body, the Joint Project Committee. Its geographic scope includes the entire area of the Indo-Swiss Project in Gulbarga. The general purpose of the PSU is to ensure project capability and foster coordination between partners during the present scaling-up process.

3.3.2 Root definition according to CATWOE

The root definition of PSU is summarised in Table 4. Identification of the ***clients*** revealed some ambiguity in the PSU's role, as several quite diverse groups need to be satisfied. These range from policy level government agencies to NGO and line agencies involved in micro-watershed development.

The ***actors*** of the small PSU were readily identified. Similarly, the "***Weltanschauung***", based on the project philosophy, presented little difficulty. The key points relate to the need for coordination and a common communication platform between various actors and segments of the large, multi-functional project.

Table 4 Root definition of PSU/PIDOW

Clients	Joint Project Committee composed of the DLDB, SDC and MYRADA
	Individual NGOs operating in each watershed
	District committee
	Line agencies of the district government
Actors	PSU coordinator (social aspects), deputy coordinator (technical aspects) and staff
Transformation	Project concept: *tested* on a pilot level > *adapted and broadly applied*
	NGOs and government agencies: *willing* to apply the approach > *capable* of adapting and applying the approach
	Information on the project approach: *inaccessible or lost* > *available* in the right place at the right time
Weltanschauung	Participatory and integrated project philosophy
	NGO and government can and must cooperate
	Support to NGO is the most effective way to implement the project
	Five project areas require a common platform for communication
Owner	Joint Project Committee (JPC)
Environment	Policy of the JPC
	Government rules and regulations

Some ambiguity was encountered regarding ***ownership*** of the PSU. The stakeholder who could terminate the activity is clearly the JPC. Is it possible for the JPC to be both client and owner? The ***environment*** was made up of project policy and governmental guidelines.

At the core of the root definition, three ***transformations*** were identified. The first, concerning the transformation of a pilot concept into an adapted and broadly applied project concept, may be characterised as a dissemination function. The second, which aims at transforming willing partners into capable partners, is a capacity-building function. The third would transform information and experiences which are inaccessible or hidden into forms which are available to those who could benefit from them; this is a communication and facilitation function.

3.3.3 Discussion

The central issue to emerge from this trial application of CATWOE concerned the functional identity of the PSU. Most generally, the project itself is being transformed—from a pilot experience to an adapted and broadly applied approach. The PSU does not appear to have a central or directive role in this process, but rather one of facilitation.

In this light, it was asked whether the PSU is sufficiently independent as an organisation to be the subject of an CATWOE analysis? The Unit is quite new and it is possible that its functional identity has not yet emerged.

The variety of identified clients and transformation functions underline a certain ambiguity in the PSU's functional identity. Further investigation was suggested to determine whether specific transformations apply to certain clients in particular. The fact that the owner, the JPC, is also a client gave rise to the question of whether there were really two kinds of clients.

Are the farmers not also clients? How does the PSU relate to the questions of transfer of ownership discussed above? The answer to these questions seemed to lie in the intermediate role of the PSU. The unit works through local actors—NGO, district committees and line agencies—while the farmers are clients of these organisations. In particular, the PSU should assist the local NGO to deal with issues of ownership transfer.

It was felt that the environment needed to be expanded. Besides policy and institutional factors, ecological, social and economic aspects are also important.

In conclusion, at least three "hanging questions" require further thought:

- What would change if the PSU did not exist? Could this question lead to a better idea of its functions?
- What consideration is paid to the concerns and interests of the stakeholders or clients? In a commercial example such as the bakery, it is relatively easy to make assumptions regarding the interests or demands of the client. In this developmental example, too little is known of the various interests of the clients.
- Is it really important to identify a single transformation defining the purpose and reason for being of the PSU? Perhaps the role of a facilitating agent in a development process is necessarily multi-functional?

4. Review of five cases

Five quite different cases from Ghana, Sri Lanka, Cameroon, Mozambique and Lesotho were examined from the perspective of ownership transfer and assessed by means of the CATWOE tool.

4.1 Ghana Water and Sanitation Corporation Assistance Programme GAP

4.1.1 Project description

Approximately 47% of the 11 million rural inhabitants of Ghana have access to adequate drinking water. Supply is provided from 10,000 boreholes fitted with handpumps, 8,000 hand-dug wells and a small number of mechanised boreholes and gravity systems. Most of these facilities have been provided by the Ghana Water and Sewerage Corporation (GWSC) with certain support from donors and NGOs. Besides the provision of water supply facilities, the GWSC is also responsible for system maintenance and revenue collection through user charges.

While these arrangements have performed satisfactorily in the technical sense, collection of user charges has been very poor. People see the provision of water supply as a government responsibility—a social service which should be free of charge. The system depends on mounting subsidies and is becoming increasingly unsustainable.

In 1994, the Government elaborated a national Community Water and Sanitation Strategy under which all new facilities will be owned and operated by the beneficiary communities. Furthermore, modalities will be elaborated for transferring existing water supply systems to community ownership and management. The main features of the new strategy are:

- Community ownership and management of water supply and sanitation systems
- Demand orientation: communities choose the system which fits their capacities
- Community contribution to capital costs and full responsibility for O&M
- Private sector and NGO provision of goods and services with government in a facilitating role
- Integration of water and sanitation to maximise health benefits
- Active involvement of women in all activities.

A total sector investment of about USD 130 million is anticipated to implement the strategy. In order to develop the approach and investigate the issues involved, a Canadian (CIDA) supported GWSC Assistance Project (GAP) has been prepared. GAP proposes to transfer 34 small town water supply systems, beginning with a first phase of 14 systems.

The national level CWSD comprises 12 professionals and support staff. Regional teams including engineers, hydro-geologists, planners, sociologists and educational trainers have been established to assist communities and private sector actors to assume their new roles. As a condition for ownership transfer, communities are required to prepare a 15-year business plan, a planning tool which should increase communities' capacity to ensure the financial and technical sustainability of water supply systems.

4.1.2 Ownership issues

In 1995, 6 communities began the transition to self-management. The programme includes system rehabilitation to improve the effectiveness and quality of water supply as well as institutional and organisational support to deal with the political and community pressures related to tariff setting and effective fee collection.

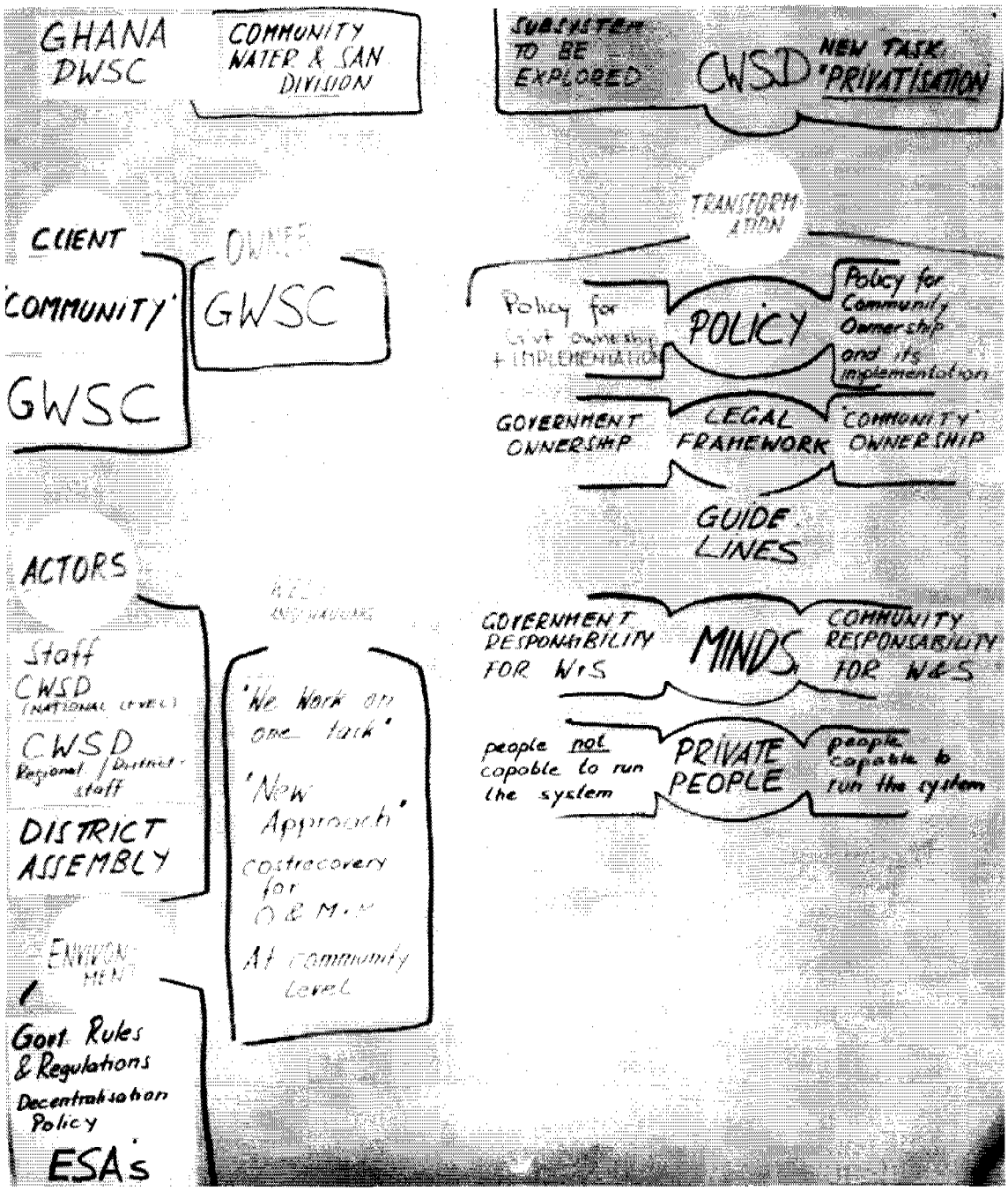
While the performance has not been as good as hoped, considerable progress has been achieved. In one example cited, revenues increased by 120% in one year; while covering only 50% of expenses in 1994, revenues exceeded expenses by 10% in 1995. In another example, revenues were increased by 800%, to exceed expenses by over 50% in 1995. Rehabilitation measures are expected to further increase service volume and quality and thus improve revenue collection.

In spite of the demonstrated potential, further progress is blocked by the absence of a clear *legal basis* for water system ownership by local communities. At present, ownership transfer is based on provisional "memoranda of understanding" between government and the communities. The main outstanding issues:

- What is a community? Is it a legal entity capable of assuming ownership and responsibility for delivering water supply?
- Does the GWSC have legal title to the existing systems? Can it transfer ownership to the local communities, including the land which the facilities occupy?

- Does the GWSC require approval from other state agencies for ownership transfer? Are there other legal entities besides communities who could assume ownership?
- What oversight and regulatory arrangements are required to protect the interests of water users without interfering with community ownership?

Figure 6 Exploring CWSD, Ghana, with CATWOE



4.1.3 Application of the CATWOE tool

Delimiting the system: The selected sub-system was Community Water and Sanitation Division (CWSD), which is responsible for decentralising and privatising existing water supply systems within the GAP programme. This organisation corresponds to the mandate of the resource person.

Root definition: Based on the notion that ***clients*** are those who need to be satisfied with the sub-system activities, they were found to include the communities (who are served by the CWSD) as well as the GWSC (which is organisationally responsible for the CWSD). The GWSC is, at the same time, ***owner*** of the sub-system. ***Actors*** include the national level CWSD staff, district staff and the district assemblies responsible for local government units.

The ***Weltanschauung*** underlying the organisation definition include the shared objective of successfully implementing the new, demand-oriented approach, and the belief that community-level cost recovery is required for sustainability. The ***environment*** of the CWSD includes government rules and regulations, decentralisation policy and the programmes of donor agencies.

Table 5 Root definition of the Community Water and Sanitation Division, Ghana

Clients	Communities, GWSC
Actors	GWSC staff (national and local), District assemblies
Transformation	policy: government provision > community provision of water supply legal framework: government ownership > community ownership minds: government responsibility > community responsibility for water private people: not capable > capable of managing water systems
Weltanschauung	Shared objective, new approach, cost recovery at the community level as essential to sustainability
Owner	GWSC
Environment	Government rules and regulations, decentralisation policy, external support agency
Issues	Can the client also be an owner? Unclarity concerning the essential transformation

What, finally, is transformed by the CWSD? The work group identified five stages of ***transformation***, including i) the policy level, where government provision of water supply would be transformed into a system of community provision, ii) the required legal framework, iii) corresponding government guidelines, iv) changed attitudes (or minds) of the people, and v) developed capacities of the people responsible for operating community water systems.

4.1.4 Discussion

Work group members were not satisfied with the outcome of CATWOE application: the expected insights did not materialise. The question of transformation gave the most difficulty. If applied too narrowly, a single-activity definition was found too restrictive. However, a wide application led to a rather confusing array of activities. Group members wondered whether another tool might not have led to better results.

In retrospect, the inclusion of two different kinds of clients appears questionable. One might have looked more closely at the very different interests of the communities—who are expected to take over the systems but are perhaps reluctant to do so—and the GWSC—which would like to divest itself of water supply systems which, at present, are liabilities rather than assets. The category of Weltanschauung also requires further thought. Do the communities and central government agencies really share the same belief regarding community-managed cost recovery?

The resource person was disappointed by the lack of progress regarding the legal aspects of ownership transfer for existing water supply systems. One might ask, however, if the underlying problem is really a legal one. In fact, the crucial transformations seem to be economical and institutional. Economically, loss-generating water supply systems need to be transformed into profit-making undertakings; initial results indicate that this is possible. Institutionally, responsibility must be transferred from central government agencies to local entities. There are evidently risks involved in attempting these two transformations simultaneously. This is necessary, however, because community management appears to be a precondition for effective cost recovery.

If all stakeholders at national, district and community levels were convinced of the benefits of decentralisation, it would not be difficult to mobilise the political will for the required legal clarifications and/or changes; it would only be a technical matter. The real question seems to be: who carries the

risk until a viable solution has been broadly established? Are the legal difficulties, in fact, a reflection of stakeholders' reluctance to shoulder institutional and economic risks? It may be advisable to devise intermediate legal arrangements to facilitate risk-sharing between national and local entities (and donors) until the viability of the new arrangements is demonstrated.

4.2 Sarvodaya Rural Technical Services SRTS, Sri Lanka

4.2.1 Project description

Sarvodaya means "awakening of all" and Shramadana refers to a "sharing of time, thought and effort". Based on these principles, the goal of the Sarvodaya Shramadana Movement in Sri Lanka is to promote a way of life in which people contribute to the happiness of themselves as well as others.

The movement recognises ten basic human needs: healthy environment, water, clothing, food, housing, sanitation, communication, energy, education and spiritual/cultural activity. A number of programmes have been developed to promote the satisfaction of these needs, including Poverty Eradication and Empowerment of Poor (PEEP), Early Childhood Development Programme (ECDP) and the Sarvodaya Rural Technical Services (SRTS).

In principle, SRTS follows a five stage village development model:

- building appropriate attitudes (psycho-social infrastructure)
- group formation
- establishment of technical support
- economic activities
- extension of help to other villages.

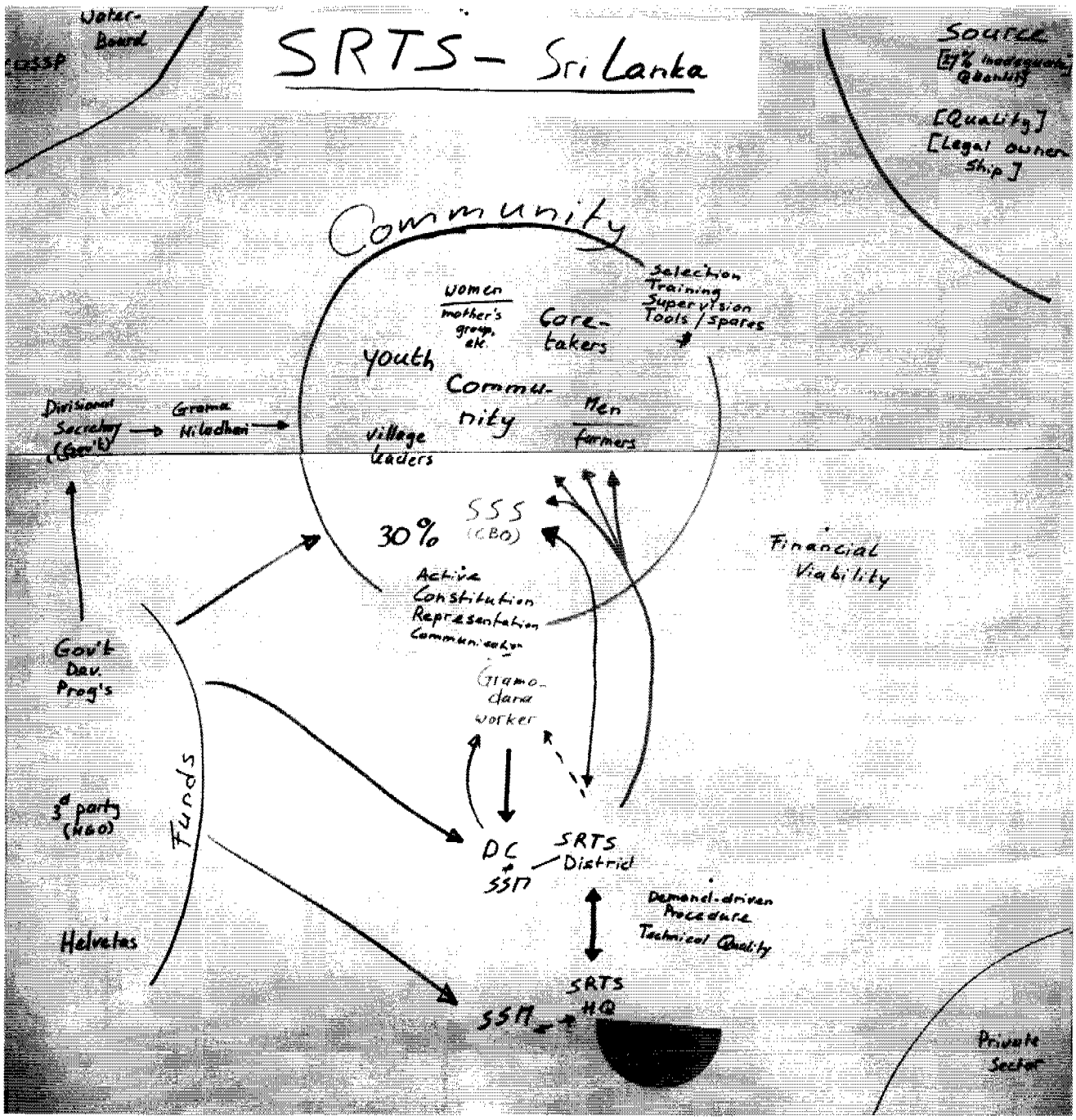
In 1991, only about two-thirds (65%) of Sri Lanka's rural population had access to adequate water supply, while less than half (45%) of the population had adequate sanitation facilities. These average figures mask important regional differences; rural water supply coverage varies between 37% and 75% of the population, for example.

The government's past efforts to improve rural services have not been highly effective. Main difficulties and constraints include:

- overlapping responsibilities and lack of coordination
- focus on provision of physical facilities; inappropriate technological solutions, lack of a comprehensive sectoral plan

- supply-driven programmes motivated by patronage relations and a welfare orientation
- high costs, unsustainable levels of subsidy
- inefficiency, shortage of skills, lack of accountability.

Figure 7 Project description: SRTS, Sri Lanka



Since 1990, a new approach to rural water supply has begun to emerge. The main features include:

- water is considered as an economic good
- demand orientation, focus on the economic sustainability of investments
- participation and capacity building linked to physical development
- appropriate, low-cost technology
- shift of the government role from provision to promotion and facilitation
- private sector involvement.

Experiences of the Sarvodaya Shramadana are relevant to this strategy and, with World Bank support, the government is presently trying to replicate the NGO's participatory approach to rural water supply development. The SRTS procedure begins with the request for assistance from a village community—which may result from interaction with a Gramadana (or social) worker. The request is channelled through a District Coordinator to the SRTS, which sends a technician to conduct preliminary surveys. If the project is found to be feasible, a participatory planning process is initiated. The SRTS negotiates with the community regarding their contribution; if the community makes no significant commitment, the project is judged to be unfeasible. In practice, village contributions range between 30% and 50% of investment costs. Besides physical improvements, the SRTS introduces community development and capacity-building activities. If the investment project exceeds the capacity of the SRTS, additional assistance is sought among donor agencies and/or government. Once external financing and community contributions have been secured, the project follow the same development path. Upon completion, the water supply system (and other facilities) are handed over to the village Shramadana Society for operation and maintenance. The annual budget of the programme is about USD 400,000; about 130 schemes are involved.

4.2.2 Ownership issues

The SRTS aims to generate community awareness and ownership of the development process. Issues arise in the following areas:

- Where there is no adequate source of water, dependency is difficult to overcome.
- Community ownership is hindered if there is no active CBO with good community representation and communication.
- Care is required in selecting, training and supervising caretakers of the water supply systems.
- Financial viability is often difficult to establish; schemes must be kept within the means of the community.
- Adequate long-term operation and maintenance is a major problem.

4.2.3 Application of the CATWOE tool

Delimiting the subsystem: Rather than the project organisation itself, the work group selected "community management of water supply systems" as the sub-system to be investigated. Community management extends, in principle, through four phases of mobilisation, planning, construction and operation and maintenance. This choice was motivated by a recently completed evaluation of operation and maintenance in SRTS water supply schemes, and by the far-reaching importance of O&M problems.

Root definition: The ***clients*** of the community management system remain the individual water consumers while the ***actors*** change from phase to phase. In the mobilisation phase, they include the Gramadana worker, CBO members, and various community leaders (teachers, religious leaders, activists, etc.) and community members. Planning phase actors are limited to the Gramadana worker and CBO. The implementation phase involves, besides these two actors, the water system caretaker and SRTS technician. Finally, O&M phase actors include the caretaker, CBO and standpost monitors. ***Owner*** of the system is the CBO.

Elements of the ***Weltanschauung*** were found to include belief in the necessity of community management, the value of self-help and the conviction that "water is life". The system ***environment*** was identified at the levels of ecology (the availability of water resources), technology (viability of technical solutions) and legal systems (government laws and regulations). As with the actors, key ***transformations*** depend upon the phase of development:

Mobilisation	A generally unorganised community is transformed into an organised community with legal identity
Planning	The CBO with a need (i.e. for water) is transformed into a CBO with a plan of action
Construction	The CBO with an action plan is transformed into a CBO with a water supply system; Unskilled community persons are transformed into skilled caretakers
O&M	CBO with WS facilities is transformed into a CBO with a well maintained, sustainable WS system.

The core transformation was the latter; sustainability of the water supply system being the main purpose of the management system.

Table 6 Root definition of Sarvodaya Shramadana community managed water and sanitation system, Sri Lanka

Clients	Water consumers	
Actors	Changes from stage to stage, including Gramadana worker, CBO, village leaders, caretakers, community members	
Transformation	Changes from stage to stage:	
	Mobilisation	Community with poor organisation > organised community
	Planning:	CBO with water needs > CBO with plan of action
	Implementation:	CBO with plan > CBO with water supply system
		Community persons unskilled > skilled caretakers
	O&M:	CBO WS system with maintenance needs > effectively maintained, sustainable WS system
	General:	Safe water > improved health
Weltanschauung	There is no alternative to self-help WS management; water is life	
Owner	CBO	
Environment	Availability of water resources; viability of technology; laws and regulations	

4.2.4 Discussion

The group was not very satisfied with the trial application of CATWOE. The tool did not help participants to clarify problems or come to terms with the main issues. While CATWOE may be effective in describing the assumptions of a functioning management system, participants did not find it useful in analysing a malfunctioning system. Issues of efficiency and effectiveness were not addressed. The management tool was thought to be better suited to a business environment as opposed to that of a development project. It was not considered to be "user friendly", particularly with regard to the concepts "transformation" and "environment". The relevance of CATWOE to the issue of ownership transfer did not emerge and no significant insights were achieved.

Group members felt that they had been led to concentrate too much on the tool and too little on the main tasks and issues; they wondered if the tool had been correctly applied. For example, it would be useful to further explore connections between the main interests of the clients (water consumers) and core purposeful activities (transformations). With the root definition focused on transformations of the CBO itself, this connection appears somewhat tenuous. In fact, transformation of water supply delivery would

be of greater interest to the water consumers. Factors such as the dependability, quality and price of services would be important. Which core transformation relates most directly to these client interests? What structural characteristics would ensure the responsiveness of management systems to these interests?

4.3 Badoumven, Cameroon

4.3.1 Project description

Badoumven is a rural community in the West Province of Cameroon with a population of about 4,000 persons. The main economic activity is coffee growing. The case study of water system development spans a period of 10 years.

Water supply is a government responsibility. There is some overlapping between the responsibilities of different agencies such as the Ministry of Agriculture and the Ministry of Mines and Power, however. Due to government inactivity, shortage of financing and lack of confidence, the population of Badoumven took the initiative to develop a local water supply system. A Water Project Committee was formed as an outgrowth of the Village Council's Development Committee, and project work commenced in 1988.

Unfortunately, the project was a failure. The hired contractor was inexperienced and the surface water collection facility which was built dried up at the end of the rainy season. The community also built a 10 kilometre pipeline, but it too was ineffective. A storage tank was constructed on private land and when the owner subsequently fenced in the area, access was lost. Furthermore, a private land owner installed a poultry farm at the site of the intake structure, with unfortunate consequences for water quality. Finally, the contractor absconded with the remaining money.

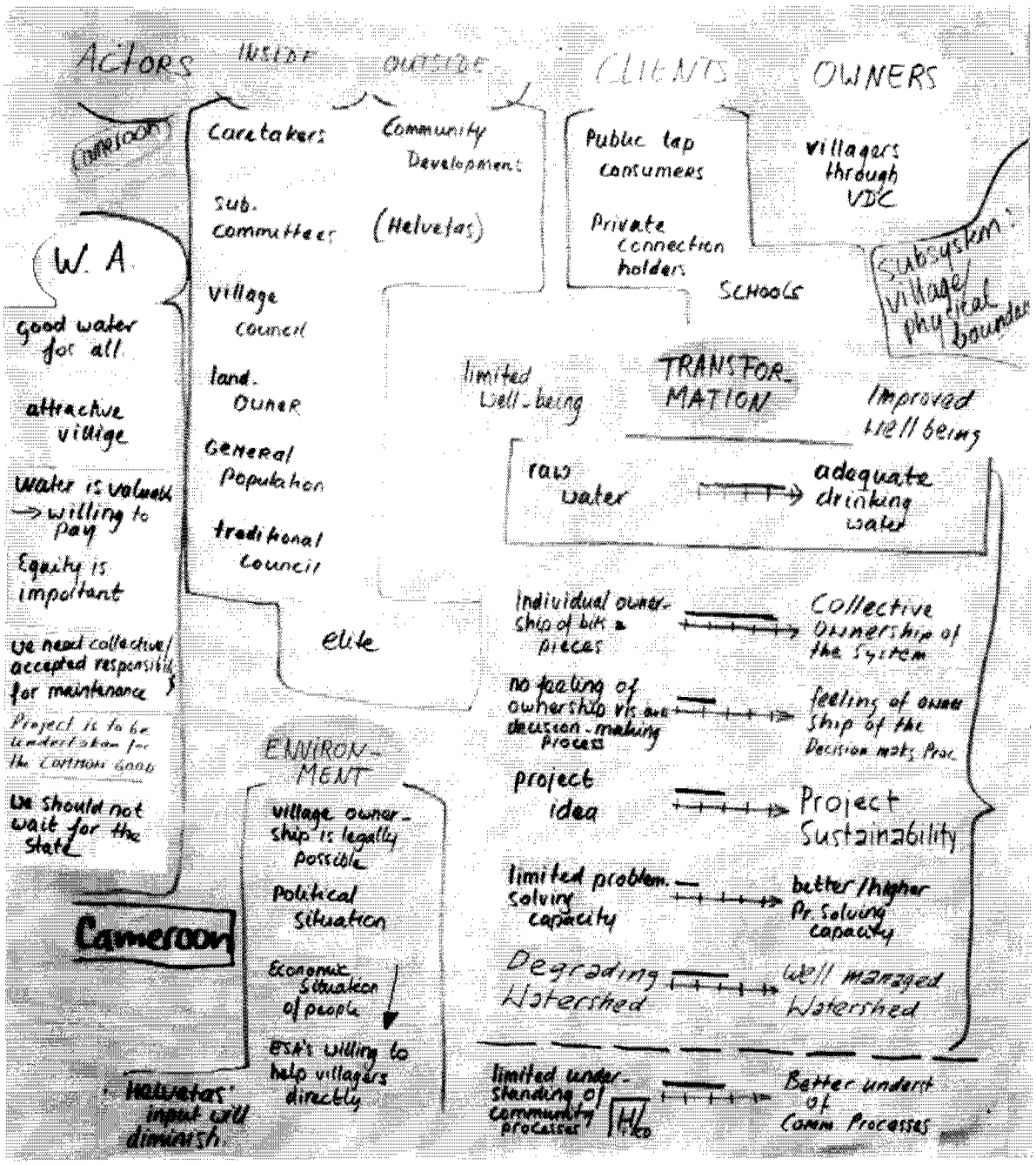
In 1992, the Village Development Committee sought assistance from the government Department for Community Development of West Province. Cooperation of Helvetas was secured to tackle the problems of water supply and village development.

4.3.2 Ownership issues

The Village Committee was reorganised to broaden popular participation and project work began in 1993. The first activities included efforts to clarify land rights to the catchment area and obtain legal right of access to the water storage tank.

At present, the Village Council is acquiring the land upon which structures are located, as well as land for future extensions. A piped water network is being constructed to connect the source, storage tank and distribution system. Villagers will cover part of the costs through fund raising and charges on private connections. Individual and agency donations will be required to complete the system.

Figure 8 Exploring Badoumven with CATWOE



4.3.3 Application of the CATWOE tool

Delimiting the sub-system: The village, with its physical boundaries, was taken as the sub-system under investigation.

Root definition: The ***clients*** of the system are the water consumers, including private tap owners, public tap users and institutions such as schools. ***Actors*** were distinguished between those inside the community (caretakers, sub-committees, village council, land owners, general population, the traditional council) and those which are outside the community (Community Development Department and Helvetas). ***Owners*** are the village themselves, represented by the Village Development Committee.

The ***Weltanschauung*** comprises shared belief in the importance of an equitable supply of good water and an attractive village environment. Water is considered to be a precious good for which users should pay. Finally, self-reliance and collective responsibility are valued, according to the motto: don't wait for the state". The ***environment*** sub-system includes the legal system which enables village ownership, political context, economic situation of the people and willingness of external support agencies to support village development.

Table 7 Root definition of Badoumven

Clients	Water consumers
Actors	Internal: caretakers, sub-committees, village council, land owners, general population, the traditional council External: Community Development Department, Helvetas
Transformation	Water: raw water > adequate drinking water Ownership: fragmented private ownership > collective ownership of water supply Decision making: lack of participation by the people > common ownership. Project:: idea > sustainable project. People's problem solving capacity: limited > effective Watershed: degraded > well-managed.
Weltanschauung	Good water supply for all, attractive village, water is a valuable good which must be paid, equitable water supply, collective responsibility for system maintenance, self-reliance
Owner	Villagers, through the Village Development Committee.
Environment	Legal system, political situation, economic situation of the people, external support agencies.

A range of ***transformations*** were identified. Concretely, raw water is transformed into adequate drinking water supply. On the organisational level, fragmented private ownership of water components is transformed into the collective ownership of a coherent water supply system. The situation of poor participation is transformed into common ownership of participatory decision-making processes. At the implementation stage, the project idea is transformed into a sustainable project. Limited problem-solving capacity will become effective problem-solving capacity. Finally, at the ecological level, a degraded watershed will be transformed into a well-managed watershed.

4.3.4 Discussion

The work group was able to employ CATWOE effectively to describe and assess the project situation. Identification of actors and discussion of their Weltanschauung assisted members to gain understanding of the different interests and views of stakeholders. This would, of course, be more productive if the stakeholders themselves could participate in the discussion. As an isolated exercise, there is some danger of assuming too much about the interests of other partners.

The differentiated descriptions of transformation processes were found useful for monitoring the present status of the project and planning required actions. They would also foster a learning process by external actors such as HELVETAS. The group's subjective assessment showed that satisfactory progress is being made with the physical development (hardware transformations) while the capacity building and institutional development (software transformations) lag behind. To develop the tool further, more precise and revealing indicators are needed for each transformation.

The group felt no need to limit transformation to a single purposeful activity; multiple transformations seem to be characteristic of development processes. Ownership issues were directly addressed by the tool, which identified the transformation of ownership patterns as one of the central management activities. It must be noted that this transformation has nothing to do with ownership of the management system itself, which remains with the villagers through their Village Development Committee.

4.4 Cabo Delgado, Mozambique

4.4.1 Project description

Cabo Delgado, the northern most province of Mozambique, is one of the poorest regions of a poor country. With a land area of nearly 80,000 km² and a population of about 1.2 million persons, the province is very large and sparsely settled.

As the place of origin of the liberation movement, Cabo Delgado has more than three decades of war behind it. The local mentality and administrative systems are still marked by Marxist ideology, centralised planning and deference to central authority. The break-down of the traditional village society has been exascerbated by the government's earlier attempts to consolidate administration and service provision by resettling the rural population in "communal villages". Economic and political uncertainties have caused many traders to leave the province. Following the peace accords of 1992 and the country's first multi-party election in 1994, Mozambique faces enormous tasks of reconciliation, reconstruction and development.

Water supply remains a major problem in Cabo Delgado. At an assumed ratio of 500 persons per waterpoint, the existing total of 1400 waterpoints provides service to about 67% of the population. In fact, many waterpoints dry up seasonally and year-round water supply is available to only about 35% of the population.

Swiss development assistance to Cabo Delgado started in 1979, with an initial emphasis on the construction and maintenance of water supply facilities. In 1992, the focus of Helvetas's technical assistance programme shifted towards institutional development in the water sector.

The overall project goal is to improve the well-being of the rural population of Cabo Delgado through adequate and sustainable access to safe water supply. Objectives include i) decentralisation of rights and responsibilities, ii) effective community participation in the provision, operation, maintenance and management of water supply and iii) building institutional capacity for water supply development and maintenance. A demand-oriented strategy is essential to these objectives.

The main partners and related sub-objectives are:

• Water Department (DA), Provincial Directorate for Public Works and Housing (DPOPH)	Become an effective organ for policy, coordination and supervision in the water sector.
• Provincial Rural Water Workshop (EPAR)—a para-statal organisation	Ensure efficient construction, operation and maintenance of water supplies.
• Community Participation and Education Programme (PEC) of the EPAR	Facilitate involvement of the rural population as real partners in the provision of water supply.

At the level of the Water Department, the project aims to introduce national water policy in the province and elaborate a sectoral development plan incorporating principles of demand-orientation. Improvements are sought regarding information management (e.g. computer data-base on water points, establishment of a Planning, Monitoring and Evaluation Section, etc.) and financial management. Applied water technology will be standardised.

The preventative maintenance capacity of the Provincial Rural Water Workshop (EPAR) is being strengthened through its team of water minders. Other major aims include organisational re-dimensioning, training, quality control, improved accounting practices and orientation towards self-financing.

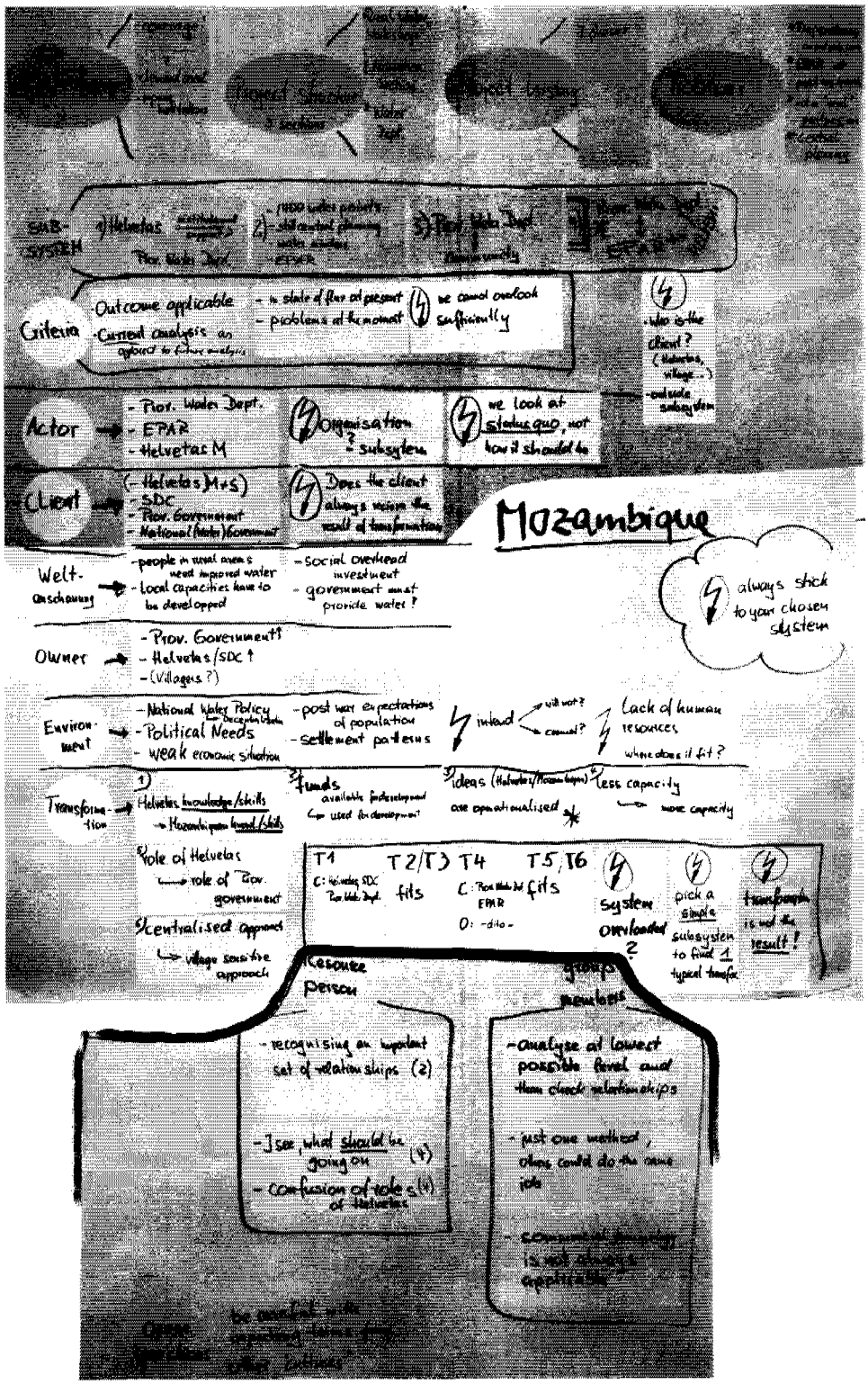
Technical assistance to community participation has been expanded and a new concept of animation and community participation has been tested in five villages. This is expected to lead to a new definition of the project cycle which will, in turn, influence restructuring of the water sector.

4.4.2 Ownership issues

A central aim of the project is to achieve self-sufficient and sustainable management of water supply through the decentralisation of responsibilities and enhancement of institutional capacity. In this regard, several constraints and problems must be overcome. First among these is the high degree of dependence of the institutions concerned on outside support. In financial terms, for example, Helvetas funds 100% of Water Department investments and 66% of its operating budget, 90% of the EPAR operating budget, 90% of the PEC operating budget and about 50% of the provincial budget for water system maintenance. A second problem is the lack of orientation towards cost recovery; EPAR revenues are not directly linked to services actually delivered, for example. Thirdly, due to administrative cen-

tralisation, the organisations involved cannot function as full project partners. Finally, there is still widespread lack of responsibility for water supply systems at the community level

Figure 9 Exploring Cabo Delgado with CATWOE



4.4.3 Application of the CATWOE tool

Delimiting the sub-system: After considering several alternatives, the group selected the three-way partnership of the Provincial Water Department (DA), Provincial Rural Water Workshop (EPAR) and Helvetas as the sub-system to be investigated. This system is presently in a state of flux and several problems require attention. In particular, EPAR is having difficulty with the present reorganisation and feels in some sense abandoned by the project.

Root definition: The ***clients*** of the system include SDC, Helvetas (Switzerland and Mozambique), and the provincial and national governments. The villages were not considered to be clients, bringing up the question of whether clients need to be those who receive the results of the transformation process. ***Actors*** comprise all the three members of the sub-system: DA, EPAR and Helvetas Mozambique. The system ***owners*** were identified as the provincial government, SDC and Helvetas. Thus, the owners (those who can stop the activity) are equated with clients (those who should be made happy or satisfied with the activities).

The ***Weltanschauung*** shared by participants includes a belief that the rural population needs improved water supply, that government is responsible for the provision of water as an investment in social overhead, and that water management capacity needs to be improved. The ***environment*** of the sub-system includes: national water policy; decentralisation policy; political influences; the depressed economic situation; dispersed settlement pattern and the post-war expectations of the people. Available human resources are also an important factor.

As outlined in Table 8, six ***transformations*** were identified. These related to 1) knowledge and skills (Swiss know-how will become that of Mozambique, 2) financial resources (funding available will be transformed into funding employed for development), 3) ideas (concepts will be operationalised), 4) capacities (existing, inadequate capacities will become higher capacity), 5) roles (certain responsibilities presently carried by the Helvetas project will be taken over by provincial agencies) and 6) approach (the current centralised approach will become a village-sensitive or village-based).

Table 8 Root definition of Cabo Delgado

Clients	Helvetas (CH and Mozambique), provincial and national governments
Actors	DA, EPAR and Helvetas Mozambique
Transformation	know-how Swiss > Mozambique funds available for development > employed for development ideas as abstractions > realised capacities insufficient > sufficient role of Helvetas > role of government approach central planning approach > village sensitive approach
Weltanschauung	rural population needs improved water supply; government is responsible for water provision; management capacity needs improvement
Owner	Provincial government, SDC, Helvetas
Environment	national water policy; decentralisation policy; political influences; economic situation; settlement pattern; post-war expectations of the people; available human resources

4.4.4 Discussion

Having decided on a broad definition of the sub-system (comprising two provincial agencies plus Helvetas) the work group was aware that this would present certain difficulties regarding the designation of the client. As in previous cases, there appeared to be two kinds of clients: those who *give* (i.e. donor agency, Helvetas) and those who *receive* (i.e. the beneficiary institutions DA and EPAR). It was curious, furthermore, that the owners (those who can stop the activity) turned out to be the same as the clients. This did not appear to be very useful, and the group made a review of the internal consistency of the root definition, asking whether the definitions of client and owner remain valid for each transformation (see Tab. 10).

Before turning to this review, it may help to clarify the definitions of roles by considering how the terms—client, owner and actor—are employed in the commercial management context. Here too, more than one type of "client" may exist. Most commonly, the ***client*** is a customer who does, indeed, pay, but whose essential role is that of *receiver* or *beneficiary* of the purchased goods and services. It is the ***owner*** who *gives*, in the sense of providing capital, equipment, work space, etc.—under the expectation, of course, that this investment will earn a profit. The ***actors*** are employees who produce the goods or services.

Another example, representing a quite different kind of client, is the case of a manufacturing company which hires the services of a management consultant to improve company operations; the main outputs are *recommenda-*

tions. In this case, the ***client*** is the director/owner of the company who gives a mandate to the consultant, receives his recommendations and pays him. The consultant is the ***actor***. Who, then, is the ***owner***? Regarding the consulting activities, it is surely the proprietor of the consultancy firm.

However, when the company director acts on the consultant's recommendations and reorganises his enterprise, this is a second type of transformation, the output of which is *organisational*. The enterprise director is now the ***owner***; the ***clients*** are the staff and employees of his enterprise. Finally, before, during and after company reorganisation, goods are being produced and sold. This is a third type of transformation in which the outputs are products. ***Clients*** in this case are the customers of the company. There are, in summary, three types of transformation, each with another client:

Table 9 Types of transformation in a management system

Transformation type	Characteristics
Recommendation - Owner - Client	**consultant know-how > recommendations** - consultant firm - directors of the manufacturing enterprise
Organisation - Owner - Client	**recommendation > reorganised enterprise** - directors of the manufacturing enterprise - employees and staff of the enterprise
Product - Owner - Client	**materials > finished products** - directors of the manufacturing enterprise - customers (purchasers) of the products

The ambiguity which characterises many development situations, particularly in the area of institutional development, results from the fact that transformations at the levels of recommendations and organisational change are often intertwined, so that it becomes unclear who is responsible for what. Commonly, an external support agency (ESA) works with a partner institution as a kind of consultant, formulating proposals for institutional strengthening (*recommendation-transformation*). It is intended that the institution will take responsibility for implementing the recommendations. However, the ESA is normally involved in this *organisational transformation* as well, providing institutional support and training to the institution, for example. Furthermore, the ESA may also finance part of the investment and/or operating budget of the institution (*production transformation*). In these circumstances, it is often difficult for the beneficiary insti-

tution to become sufficiently independent to act as owner of the institutional development process (organisational transformation). With these distinction in mind, the root definition may review be considered (Tab. 10).

Table 10 Consistency of the root definition of Cabo Delgado

Transformations identified by the work group (Tab. 9)	Findings of the work group regarding role definition	Comments on transformation and roles based on "commercial" usage
1. **Knowledge**	DA and IPEC are clients, but not Helvetas	Recommendation-transformation; Helvetas is owner, not client
2. **Funds**	Definition fits:, DA, EPAR and Helvetas are all clients	Funds are resources, not inputs which are still present in the output; the transformation is not valid.
3. **Ideas**	Definition fits:, DA, EPAR and Helvetas are all clients	An abstract input cannot yield a concrete output; the transformation is not valid.
4. **Capacities**	DA and EPAR are clients, but not Helvetas	Organisational transformation; staff of DA and EPAR are clients, not Helvetas
5. **Role**	Definition fits:, DA, EPAR and Helvetas are all clients	Transfer of roles is involved; this is a change in the sub-system, not a transformation-activity of the existing sub-system.
6. **Approach**	Definition fits:, DA, EPAR and Helvetas are all clients	Organisational transformation; DA and EPAR are clients, not Helvetas

1. Concerning the transformation of Swiss know-how into local know-how, Helvetas is, indeed, not a client but an actor/owner; this is mainly a recommendation transformation.
2. Additional clarification is required regarding the transformation of available funding into project results. If funds are used for institutional development (organisational transformation), Helvetas may be actor/owner, but not client. Alternatively, if the funds are used for water development, Helvetas may not be directly involved; DA/EPAR would be actors/owners and the villagers would be clients (production transformation). Finally, it must be asked if this transformation is at all valid (see Section 2.2, p. 5). Is the input really present in the output? Or are resources being mistaken for inputs to the transformation?
3. Transformation of ideas into operationalised project activities does not seem to be a valid as the input is not present in the output; abstract quality cannot become concrete or visa versa.
4. Capacity-building is a organisational transformation; as noted, Helvetas is not client but actor/owner. In the future, of course, Helvetas would

like to leave the scene entirely. For this to be possible, the directors of DA/EPAR would have to become actors/owners of the process.

5. Parts of the role and responsibilities presently assumed by Helvetas should be taken over by provincial agencies. This is a *transfer* in the sense of an evolution of the sub-system, not a *transformation* in the sense of a purposeful activity of the existing sub-system. Therefore, the definition does not appear to be valid.
6. As in No. 4, above, the transformation from a central planning approach to a village-based approach seems to be a organisational transformation; the staff and organisation of DA and EPAR are clients, but not Helvetas. The crucial question is the extent to which the direction of DA and EPAR become actor/owners in the place of Helvetas.

Group work underlined the importance of distinguishing between individual transformations and identifying the different roles assumed by stakeholders within each transformation. In general, the client is, indeed, the beneficiary of the transformation output. Finally, the group work produced valuable insights regarding the somewhat confusing multiplicity of roles assumed by Helvetas in the project.

4.5 DRWS, Lesotho

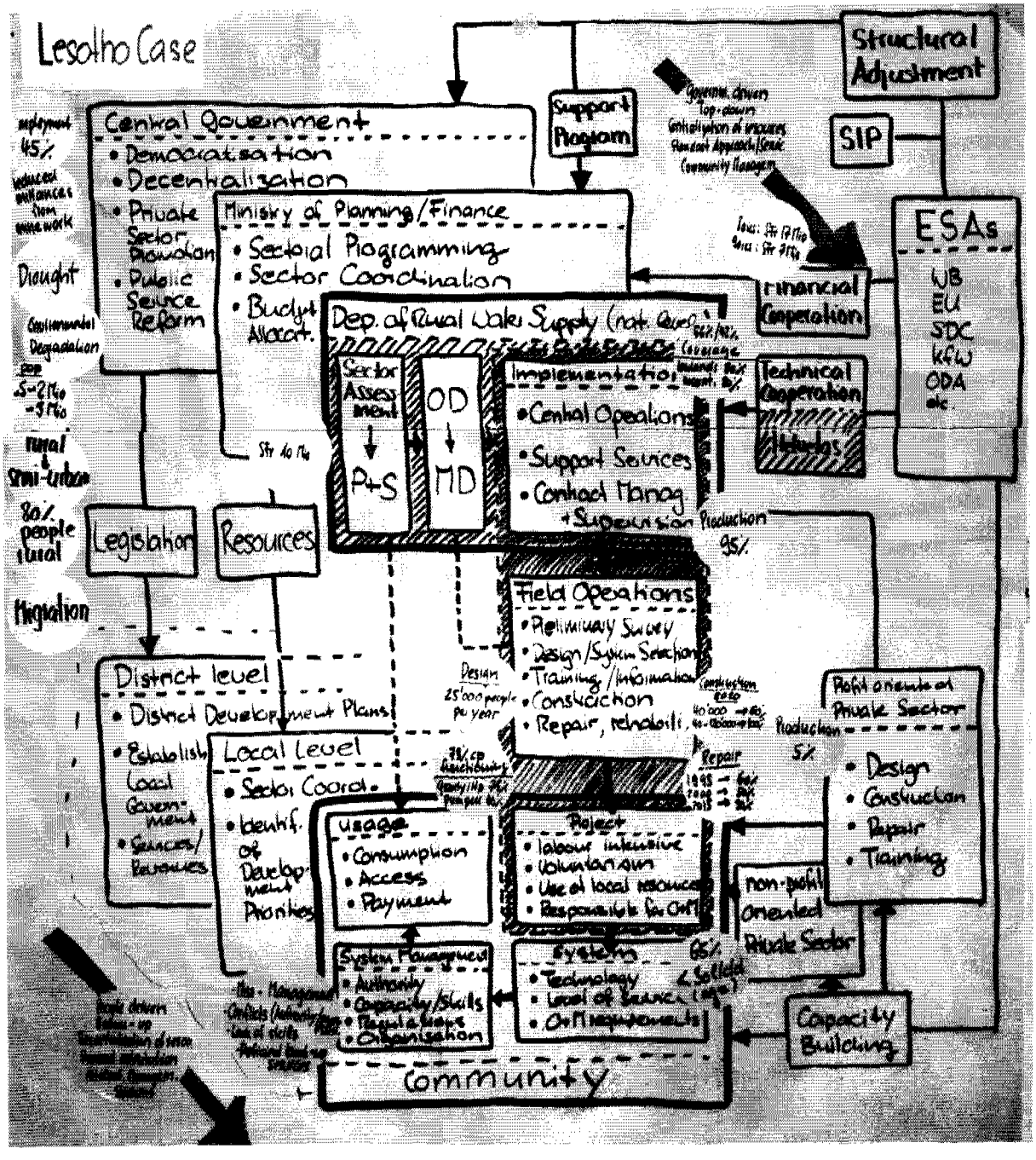
4.5.1 Project description

Lesotho is a small, landlocked country with a population of about 2 million persons, of which about 80% are rural. The poor state of the economy is presently exacerbated by reduced remittances from mine workers in South Africa, drought, environmental degradation and disappearance of agricultural lands. Unemployment is estimated at around 45%. The country has depended heavily on donor support (World Bank, European Union, and bilateral agencies such as ODA, SDC, etc.). Financial cooperation is decreasing, going from about CHF 17 million per year in the 1980s to about CHF 7 million per year in the 1990s.

Official statistics indicate that water supply is available to 60% of the population, but the actual coverage is closer to 40%. There are large regional discrepancies. About 75% of existing gravity systems are in working order, while only about 40% of pump systems are working. Water losses are high and 65% of the population receives below 30 lcd. The main reasons for poor performance of water systems include mismanagement, conflicting responsibilities, lack of skills and deficient back-up services.

The budget for the water sector totals about CHF 10 million per year. At present, two opposing dynamics characterise developments in the sector. The first is a top-down approach of centralised programme development and standardised supply-driven programming. This approach is strongly influenced by the requirements of structural adjustment. The other dynamic is a bottom-up approach which aims at decentralisation of responsibilities, demand-orientation and alternative, localised management of waste systems.

Figure 10 Project description: Helvetas Lesotho



4.5.2 Ownership issues

Switzerland has been providing assistance to the water sector of Lesotho for many years. Technical cooperation is channelled through the national Department of Rural Water Supply (DRWS).

The scope of programme activities includes:

- National DRWS: central operations, support services, contract management and supervision
- Field operations: preliminary survey, design and system selection, training and information, construction, repair and rehabilitation
- Community level: project(labour intensive, voluntarism, local resources, O&M), system (technology, level of service, O&M requirements), system management (authority, capacities and skills, regulations, organisation), use (consumption, access, payment).

The targets of capacity building activities include the community level, the private sector (profit-oriented enterprises as well as NGO) and government agencies. Helvetas channels its technical assistance through the national DRWS.

4.5.3 Application of the CATWOE tool

Delimiting the sub-system: The sub-system selected for examination is the head office of the national Department of Rural Water Supply (DRWS), which is the institution advised by the Helvetas project. DRWS is the suitable organisation for introducing the transformation of development approach sought by the project.

Root definition: The *clients* of the sub-system are primarily the field operations of the DRWS. They include the Principal Secretary of the Ministry of National Resources, Sector Coordination Group, SDC, Helvetas and other ESAs, private sector actors (profit-oriented enterprises as well as NGO), and the staff of the DRWS head office.

Actors include the National Operations Engineer (operational), the Staff of the Technical Unit (controlling and technical development), Village Affairs Officer, Contract Unit staff, Training Unit staff, Coordinator of PME, consultants for the transformation process and the Helvetas expert. *Owners* of the system include the Head of the Department (overall identity), donors (economic ownership) and the parliament (legal and political ownership).

The ***Weltanschauung*** underlying the project includes the belief that water is a universal need and right and the conviction that private sector involvement will be required to reach sector goals. The ***environment*** is characterised by *institutional aspects* (national water and sanitation strategy, national water and sanitation programme, lack of appropriate legislation and the prevailing weakness of public service systems), *economic aspects* (LHDF funds, poor economic circumstances, weak private sector) and *social aspects* (low capacity at the community level). Donor strategies and conditionalities were also considered an environmental factor.

Finally, the sub-system aims to achieve two main ***transformations***:

- Sectoral approach: sector information, data and know-how will be transformed into appropriate policies and operational plans
- Human resources: public and private sector actors who are unskilled and reluctant will be transformed into capable facilitators and managers in the water sector.

Table 11 Root definition of DRWS, Lesotho

Clients	Principle Secretary, Ministry of National Resources, Sector Coordination Group, SDC, Helvetas, ESAs, private sector enterprises, NGO, DRWS head office staff
Actors	National Operations Engineer, Technical Unit staff, Village Affairs Officer, Contract Unit staff, Training Unit staff, PME Coordinator, consultants and Helvetas expert
Transformation	Sectoral approach: information > policies and plans Public/private sector human resources: unskilled and reluctant > capable facilitators and managers
Weltanschauung	Water is a universal need and right, Private sector involvement is required
Owner	Head of the Department, donors, parliament
Environment	institutional: water/sanitation strategy & programme, legislation, economic: LHDF funds, poor economic circumstances, weak private sector social: low capacity at the community level donor: conditionalities

4.5.4 Discussion

The group experienced considerable difficulty in applying CATWOE to the case. With regard to both transformations—approach and human resources

development—the roles appeared to shift constantly from actor to client to owner, and so forth. This problem was felt to be due, in part, to uncertainty regarding the time of the analysis: did it refer to the present point in time or to the expected future?

The more fundamental source of confusion—as discussed already with regard to Cabo Delgado—stems from the ambiguity of institutional change. As a management tool, CATWOE treats *transformation* as a process which is carried out by a relatively stable organisation. When changes in the organisation itself are considered to be the main purposeful activity, the responsible sub-system must lie "above" or outside of this transformation. Institutional development or human resource development as transformation "from within" would be a contradiction in terms for CATWOE.

Perhaps for this very reason, it can be useful to apply CATWOE to development situations. It obliges the observer to clarify who is responsible for what and, in particular: "who is defending the overall objectives?"

5. Approaches to ownership transfer

Two alternative approaches to the question of ownership were presented at the workshop, not as case studies but as points of reference to enrich assessment of the five main cases. They were the South African Mvula Trust, presented by Trust member Piers Cross, and Indonesian approaches to water and sanitation in the public and NGO sectors, presented by Anton Soedjarwo of Yayasan Dian Desa, an influential Indonesian NGO.

5.1 Mvula Trust, South Africa

5.1.1 Description of Mvula

Background: South Africa is a multi-cultural, middle-income country with a population of about 42 million persons. The country has inherited great inequities and the end of apartheid in 1994 issued in a period of major transition and reconciliation.

Development needs in the water and sanitation sectors are particularly pressing. Some 25% of the total population (65% of the rural population) lack access to adequate water supply while 50% of the total population (89% of the rural population) lack adequate sanitation facilities.

Organisation and purpose: The Mvula Trust is a large-scale, independent investment fund established by three South African agencies with financial support from the European Union. Mvula is Zulu for water/rain. Operating under agreement with the government within the national water supply and sanitation policy framework, the purpose of the Trust is to assist disadvantaged communities to improve their water and sanitation services.

Approach: Mvula's main role is that of financier and facilitator; it does not build anything but provides guidelines, funding and support. Key policy aims are sustainable service provision, cost-efficiency and community empowerment. Main features of the Mvula approach are:

- self-reliance: communities own movable assets and control fixed assets
- cost-sharing: all projects are based on cost-sharing and cost-ceilings
- demand-orientation: criteria enable communities to construct facilities which they want and can afford.
- private sector involvement: implementation is accomplished by the private sector, including profit-oriented enterprises and NGO.

The Trust is publicly accountable and strives for transparency in decision-making and operations; the community, in particular, is kept informed. Small organisation, low overhead and community-based strategy are intended to result in an efficient use of public funds.

Status and future directions: Since its establishment in 1993, Mvula has received 3000 applications for assistance. About 300 projects have been contracted and 50 are complete. In the area of policy support, 25 projects are underway. The present staff comprises 67 members and budget commitment for the year 1996/97 is R170 million (USD 50 million); R72 million (USD 22 million) have been disbursed.

In the future, the Mvula Trust intends to enlarge its financial base and partnerships with other organisations. As the government extends service through large regional schemes, the Trust will shift its attention towards smaller and more remote communities. Efforts will be made to bring more private sector financing into the sector, while policy development and capacity-building is promoted at the national and local government levels. Support will be extended to NGOs and initiatives may be considered in other African countries.

5.1.2 Community ownership

Ownership relationships comprise financial, legal, moral, emotional and procedural aspects. Steps being taken to ensure community ownership regarding these aspects are outlined in Table 12.

Table 12 Ownership aspects in the Mvula approach

Aspect	Communities
Financial	pay a portion of capital costs, depending on their means; (users pay for services received)
Legal	own moveable assets and have a controlling interest in fixed assets
Moral	have the right to decide and to amend their decisions
Emotional	initiate, work on and maintain services and developments
Process	control the process from the outset and throughout each stage

The basic idea is that community ownership and demand-driven water and sanitation development can be achieved most effectively by channelling available resources directly through the communities instead of building organisations to provide services. Communities become ***clients*** of the development process rather than ***beneficiaries***.

When community representatives request assistance, they are given guidance to facilitate completion of a two-part application which covers 1) social and management aspects as well as 2) technical options and costs (see Table 13). Mvula does not conduct surveys. Instead, it makes available a list of qualified private sector agents (NGO, private enterprises, consultants, etc.) for social aspects and community training (TA) as well as for technical aspects and implementation (IA). The community hires agents of its choice and, with their support, completes the required social and technical surveys, and elaborates the technical options and costs. In many cases, engineering enterprises begin work at their own risk with a view towards job acquisition.

Table 13 Mvula Trust Project Development Process

	Procedure	Responsible
1.	Community request	C
2.	Community application Part 1: Social and Management aspects	C, MT
3.	Community contacts implementation agents, discusses technical options and costs and completes application Part 2: Technical	C, IA
4.	Project appraisal	MT
5.	Trustees approval	MT
6.	Mvula-community contract	MT, C
7.	Community-service providers contracts	C, IA, TA
8.	Implementation of training and construction	C, IA, TA
9.	Milestone payments, O&M and repair fund targets reached	MT, C
10.	Project commissioning	C
11.	O&M monitoring and local government support	C, MT, LG
12.	Evaluation	MT, NG

C = Community; MT = Mvula Trust; IA = Implementation Agent; TA = Training Agent ; LG/NG = Local/National Government

Mvula appraises the resulting proposal. If it is approved, contracts are completed between the Trust and the community (for financial and community management support) and between the community and the service providers (for training, technical support and physical implementation). Implementation of the social and technical programmes is carried out jointly by the community and its service providers with quality control and oversight by Mvula. Payments are made when agreed milestones have been achieved. Besides physical progress, milestones include establishment of an O&M and repair fund. After project completion and commissioning, Mvula ensures that O&M monitoring is in place and that operational support available from the local government. As an added incentive, the Trust offers a finan-

cial bonus (5% of capital) if subsequent evaluation (two years after completion) confirms that maintenance is satisfactory.

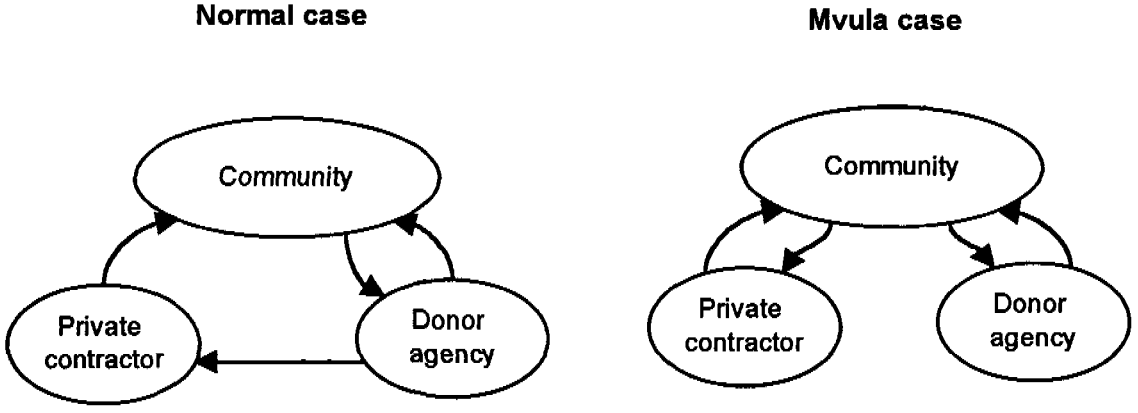
Mvula's community-based approach often involves a "management paradox" because external agencies are employed by communities to train, supervise and manage certain elements of the community itself. Thus, both parties become, in some sense, the employer of their employer (or client of their client). However, the disadvantages of this ambiguity are more than compensated by the advantages of community ownership of development processes.

5.1.3 Relevance to case studies

The five case studies were reviewed from the perspective of the Mvula approach and its development process (Table 13). It was found, in most cases, that the procedural steps were quite possible and/or corresponded to the steps actually employed. The application of subsidy for rural water supply development was also universal.

The crucial difference between Mvula and most other approaches concerns the three-way relationship between community, donor and private sector actors such as contractors (see Fig. 11). In the normal case, the development agent or donor commissions contractors to provide services to the community; the donor is client and the community is beneficiary. In the Mvula case, funds are channelled through the community, which becomes the client of the contractor. A considerable degree of empowerment may result. At the same time, this arrangement raise questions regarding control of the quality and appropriateness of inputs.

Figure 11 Community-donor-contractor relations



Regarding technical aspects, the procedure separates responsibility for design and planning from appraisal and project approval. This may, in fact, facilitate decision-making and quality control. The situation appears to be more problematic regarding social aspects and training. Participants felt that a specialised training body may be more effective than diverse private consultants. The Mvula experience to date is positive, indicating that the professional ethics of social workers and social scientists ensure a certain quality of input. At the same time, the Trust provides guidelines and seeks to relate training inputs to the functional requirements of water and sanitation management.

While recognising the advantages of the Mvula arrangement, participants noted that it can only work where the community is a recognised legal entity. This is not always the case. A second important condition is the presence of an effective rural banking system.

The high respect shown for community decision-making capacity was much appreciated. This is facilitated, it was felt, by the favourable political climate which now prevails in South Africa. Difficulties may be expected where local government agencies are bypassed by the procedure. Finally, questions were raised regarding the programme's capacity to cope with the large number of outstanding requests. The Mvula Trust does not seem to have elaborated a strategy for managing demand. Its general policy is to avoid becoming too large or assuming an unwanted political role.

5.2 Public sector and NGO approaches in Indonesia

5.2.1 Development processes in the "oil bonanza" years

Indonesia has gone through far-reaching changes since the present government took power in 1967. In that year, average annual GNP was about USD 80 per capita; today, the figure is USD 920. The oil boom of the 1970s provided the Indonesian government with ample funds and there was a tendency to try to do everything at once. The government approach to rural water and sanitation development was characterised by a highly centralised administration and somewhat paternalistic attitude.

Table 14 Government project process in Indonesia, 1970-1990

	Government project process 1970 to post oil bonanza
1.	Local government (district level) identifies villages needing water and sanitation development
2.	Rough plan and budget drawn up by line agency
3.	Plan proposed for financial support from the central government budget
4.	Budget approved for the fiscal year
5.	Community informed of measures to be implemented ("mobilisation of community involvement")
6.	Completion of detailed engineering design
7.	Contracting of local service provider by the local government
8.	Project implementation by contractor
9.	Project opening and handing over to community
10.	Reporting, focusing on financial and procedural questions

The main stages of the government's project process are outlined in Table 14. While project identification originated at the local government level, there was very little actual participation by the concerned communities. Project requests had to fit the annual disbursement programme and the budgeted funds were spent as quickly as possible. "Mobilisation of community involvement" involved little more than informing the people what was going to be implemented.

Table 15 NGO project process in Indonesia, 1970-1990

	NGO project process 1970 to post oil bonanza
1.	NGO identify target village or community
2.	Interaction between community and NGO
3.	Transformation from objective problem (seen by NGO) to felt need/real demand of the people
4.	Plan elaboration and detailed engineering design (organisational, financial, choice of technology, investment, O&M, user charges, etc.)
5a.	Selling the process
5b.	Saving and/or accumulating local resources
6.	Time lag until support becomes available
7.	Project launching and information (obtaining the blessing of local government)
8.	Training A
9.	Joint implementation by NGO and community based on self-help and transparency
10.	Physical construction completed
11.	Training B (including water user organisation, fee collection, etc.)
12.	Joint operation of the system (usually in parallel with post water project)
13.	Evaluation and assessment of lessons learned
14.	Final transfer of responsibility

The NGO approach in this period followed a quite different process (see Table 15). The process was based much more on community participation in the decision-making process. There was little direct contact with the government, although care had to be taken to win the assurance and "blessings" of authorities. Much more time was required to determine the real demand of the population, select appropriate solutions and raise the required resources.

5.2.2 Towards government-NGO partnership

During the years 1985 to 1991, there was increased contact between the government and NGO regarding rural water and sanitation development. NGOs were informed of government programmes, as contractors.

Faced with the task of developing water supply and sanitation in over 300,000 villages, the government began to perceive the potential of the NGO approach to community mobilisation, and a new phase of cooperation between the government and NGOs was introduced in 1991. In effect, the government accepted NGOs as partners and began to incorporate their contribution into the national development strategy. The main steps of the resulting project process are outlined in Table 16.

Once the partnership has been agreed and geographic scope determined, the initial task of the participating NGO is to build a network of contacts and relationships with local NGO and CBO. These are encouraged to include water and sanitation in their programmes. When a village submits a request for assistance, the NGO responds with a rapid preliminary assessment. Preliminary technical design and investment plans are then formulated and coordinated with government financial guidelines and budgets. The important tasks, at this point, are to involve local government authorities in the programme and train government personnel.

After joint assessment and selection of projects, a task force (TF) is formed with broad participation. The TF oversees planning, detailed engineering design and physical implementation, which are conducted with self-help participation according to the NGO approach. The NGO also provides training of water users groups and oversees the establishment of O&M arrangements.

Table 16 Project process in Indonesia since 1991

	Government	NGO
1.	Govt./ NGO partnership for water and sanita.	Govt./ NGO partnership for water and sanita.
2.	Fixing the geographic scope of operations	Fixing the geographic scope of operations
3.		Network development with local NGOs/CBOs
4.		Incorporation of WSS into NGO activities
5.		Community request (direct or via network)
6.		Rapid preliminary assessment
7.	Ceiling of unit cost/financial guidelines	Preliminary technical designs/investment plans
8.	Subsidy approved	
9.		Training local government personnel
10.	Joint assessment (filtering) of projects	Joint assessment (filtering) of projects
11.	Formation of task force from various origins	
12.	Interaction (task force - community request)	
13.	Plan development and detailed engineering design (organisation, finance, technology choice, investment, O&M, fees, etc.)	
14.	Financial disbursement to implementation committee (task force and community)	
15.	Joint implementation based on self-help and transparency	
16.	Physical construction completed	
17.	Training B: water user organisation, fee collection, etc.	
18.	Operation of the system (with Task Force assistance)	
19.	Evaluation of lessons learned	
20	Final transfer of responsibility to community	
	Replication	

5.2.3 Ownership issue

What conclusions may be drawn regarding ownership? Anton Soedjarwo suggested that two different kinds of ownership need to be considered: ***financial ownership*** and ***psychic ownership***. The first, more formal kind of ownership is influenced by who pays—the level of subsidy in relation to user-payment. In the case of rural water, users may pay between 5% and 50% of the cost of water supply; the exact amount is not important. This kind of ownership can be generalised from place to place. The expertise required to promote ownership of this kind is a technical ability to mobilise and convert material resources.

Psychic ownership is a moral and process-based quality. It is influenced by several factors, including the level of need, the behaviour and approach of development actors and the processes and efforts made by the beneficiaries. Psychic ownership cannot be readily transferred from region to region. It

depends on particular local circumstances. The skills needed to develop psychic ownership are based on sensitivity to social and cultural aspects.

Regarding people's ownership of water and sanitation systems, Indonesian NGOs such as Dian Desa are clearly aiming at the psychic level, which depends on attitude and process and is anchored in local traditions ("adat") rather than financial or legal systems. Regarding ownership of the development processes themselves, the psychic level is even more essential. In the given political context, attempts by an NGO to claim more explicit ownership of development processes would probably be counter-productive. NGOs avoid becoming too large, for example, as this would automatically make them more like the government (or, possibly, a threat to the government.) Similarly, the NGO networks assume no rigid form, operating more like coffee shops than organisations. Interactions are informal and connections are based on shared interests—the water turbine club, the legal rights club, etc.—rather than common programmes.

The partnership between government and NGO is an association of two quite different principles of development. The question of who is using whom remains open. For the NGO, the point is not to extend their ownership of development processes, but to get the government to act more like an NGO.

6. Reflections on CATWOE

6.1 Test application of the tool

Application of CATWOE—a tool derived from management sciences—to development projects was an experiment. As indicated by the discussions of Chapter 4, the results were quite mixed. Some valuable insights did emerge, in particular with regard to project processes and the roles of various stakeholders. In general, however, the test application was accompanied by a good deal of frustration; it produced more questions than insights.

Participants' preliminary impressions and open questions:

- CATWOE assumes a functioning system; it does not help to deal with a malfunctioning system.
- CATWOE is a descriptive devise, it does not help in coming to grips with critical issues and problems.
- Important questions of efficiency and effectiveness are not posed.
- Application of the tool did not stimulate new insights or alternative ways of doing things.
- CATWOE is not user-friendly; definitions of the main terms are not sufficiently clear.
- The definition of "systems", "processes" and "organisations" is confused.
- Is CATWOE appropriate for use in the non-commercial environment which characterises most development projects?
- Did we use the tool correctly?

In sum, the tool did not live up to expectations and participants asked whether this was a result of the tool's inherent characteristics, which make limit its relevance to development projects in the rural context, or whether it was the result of an inadequate understanding and incorrect application of the tool.

6.2 Assessing the usefulness of CATWOE

In assessing the usefulness of CATWOE, the following alternatives were considered:

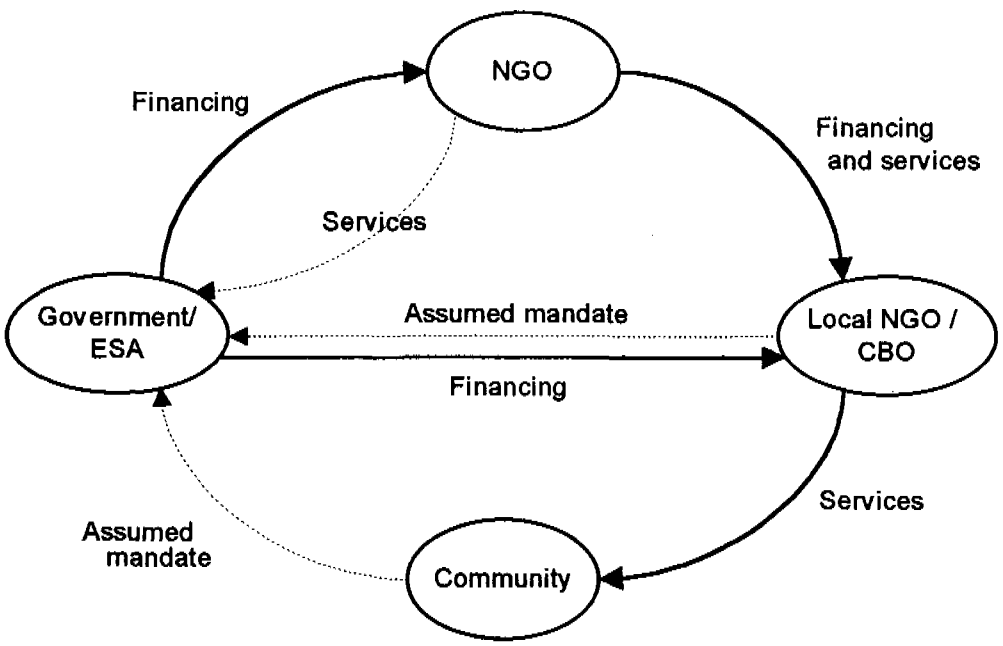
A. CATWOE—while interesting for the following reasons...—is not applicable to development projects in the areas of rural water and sanitation.

B. CATWOE has the following strong points...; to improve the usefulness of the tool and relevance to development projects in the field of rural water and sanitation, the following modifications or developments are suggested...

Discussion of these alternatives revolved about two main questions, concerning 1) owner-actor-client relationships and 2) levels of transformation in a development project.

Owner-actor-client relationships: In management systems described according to CATWOE, the relationships between stakeholders tend to be bilateral: owner-actor, actor-client, etc. In typical development projects, however, the relationships are often triangular. As shown in Figure 12, the donor—either a government agent or external support agency—which intends to assist or provide services to a community does not do so directly, but works through a NGO; the NGO itself may work through a local-NGO or CBO.

Figure 12 Owner-actor-client relationships



In each case, an *assumed mandate* links the CBO or beneficiary community with the donor. The donor pays for the service received by the beneficiaries or clients, in their place. In a sense, the donor is owner of the activity as well as a "proxy-client" who stands in for the actual beneficiary. There are admittedly dangers involved when someone pays in the place of someone else. However, most development agents view this situation as a temporary one which is nonetheless necessary because market conditions do not yet exist.

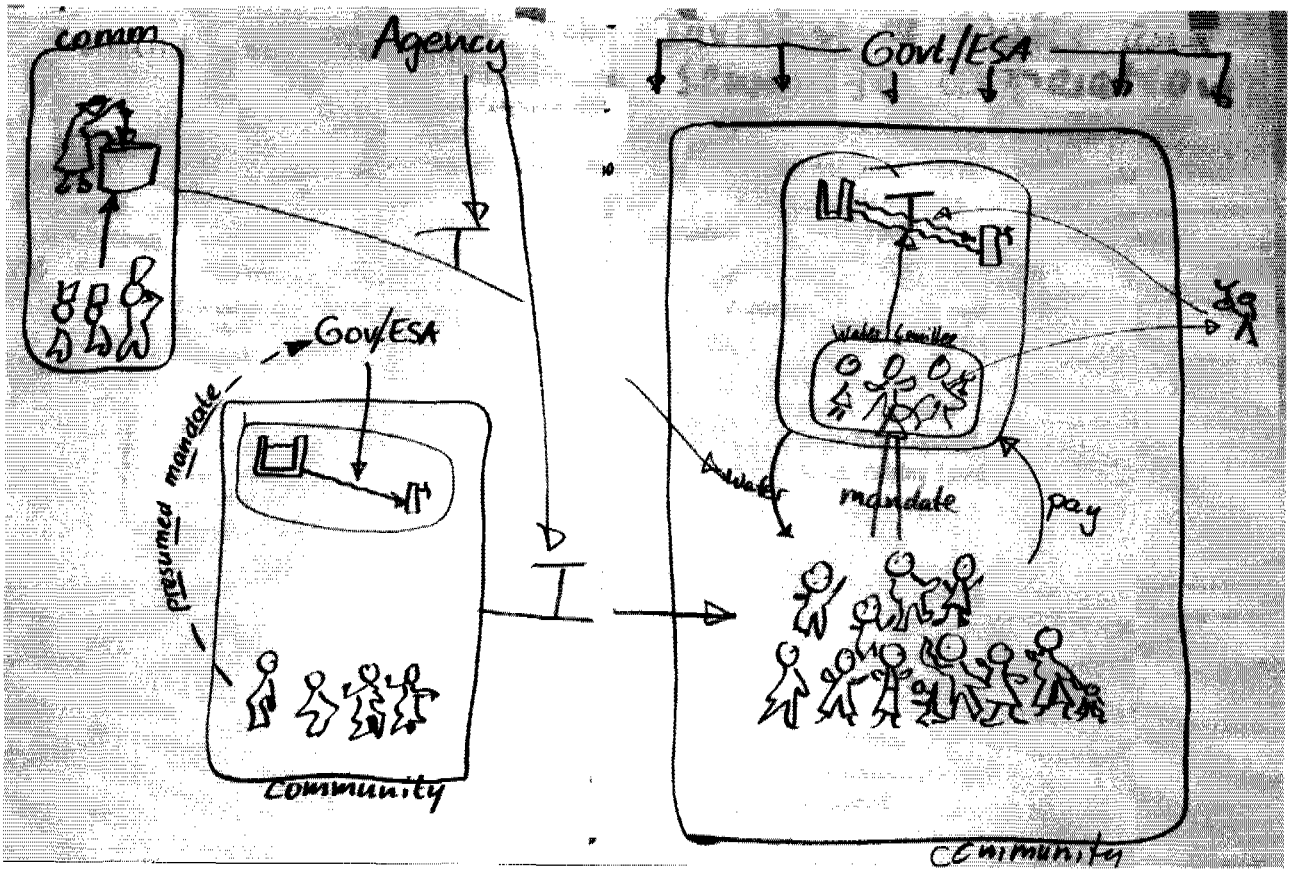
The determining characteristic of the Mvula Trust approach (Section 5.1) is that resources are channelled directly to needy communities; besides strengthening donor-community links, this enables the communities to establish conventional, bilateral client-actor relationships with service providers.

Although CATWOE was not designed to deal with triangular relationships common to development projects, it does appear possible that it could be modified to do so.

Levels of transformation: A large part of the difficulty which arose in applying CATWOE seem to result from confusion between different levels of transformation. In CATWOE terms, a water supply system would normally be seen as an organisation which transforms raw water at source into drinking water available to users. This might be a quite simple technical/organisational system ("A", at the left side of Figure 13) or a complex technical/organisational system ("B", at the right side of Figure 13). In each case a relatively static system operates a purposeful activity or transformation.

However, in most development projects, the critical transformation is the one which leads from state "A" to state "B"—the evolution of the technical/organisational system itself. It is, in principle, quite possible to analyse transformations of the second tape using CATWOE. However. the roles definitions will be different from those which apply in a relatively stable situation (see the discussion of Cabo Delgado, Section 4.4.4). Difficulties arise when roles defined according to the functioning of a stable system are combined with a transformation from one system state to another. As a rule-of-thumb it may be useful to note that the role definition employed at the outset of a transformation must also apply after the transformation; if not, a mixing of levels has taken place.

Figure 13 Transformation levels of a development project



6.3 Outlook for the tool

It was concluded that the CATWOE tool *does* have potential usefulness for the analysis and, perhaps, the design of development projects in the field of rural water and sanitation. Its main strength lies in the consideration of specific roles as well as objectives, and in the concept of transformation which required a careful identification of responsibility for purposeful activities.

However, role definitions need to be reconsidered so that they correspond more closely to the roles which arise in the development situation. In particular, further elaboration is required to deal with the triangular relationships common to development projects.

Finally, careful attention is required regarding the context and level of application of the tool within the "architecture of intervention". It may be useful to elaborate a combination of CATWOE with the "Water and Sanitation Knowledge System" developed by a previous AGUASAN workshop.

7. Conclusions regarding ownership

7.1 What is "ownership"?

Ownership is a many-sided relationship between people—as individuals or as groups—and things such as water supply systems. A crucial and quite general characteristic of this relationship is that it is consensual—meaning that ownership is a social phenomenon which depends on the agreement of those concerned. In each case, social process is required to establish agreement and recognition and, thus, to legitimise ownership.

Review of the workshop cases led to identification of five aspects or levels of ownership, each with its own process of legitimisation:

Table 17 Aspects of ownership and their legitimisation

Aspect of Ownership	Process of legitimisation
Legal	Official act, signing of paper, possession of a paper or receipt
	Handshake
	Location of the item on property of the owner
Financial	Transaction in cash or kind
	Capitalisation of manpower
Moral	Contribution or initiation of production
	Opinion of leaders
Emotional	Contribution of work
	Long habit of use
	Symbolic indication
Process-related	Physical or intellectual involvement in the process or producing the item

While there is usually a degree of correspondence between the various aspects of ownership, conflicts may arise when different aspects identify different owners. The relative importance of a particular aspect of ownership will vary from case to case. In the example of GWSC, Ghana, legal ownership stood in the foreground, whereas, in the case of Indonesia, moral and emotional ownership received the main attention. It is necessary to understand the specific context in order to know which kind of ownership and which process of legitimisation will play a major role in establishing and/or transferring ownership.

Problems may also arise when potential owners—community members or users of a water system, for example—are insufficiently aware of the processes by which ownership may be legitimised. This problem is particularly relevant when physical development of a water supply system transforms material interests and changes the relevant type of ownership from traditional forms (which depend mainly on moral and emotional aspects) to modern forms (which depend more on legal and financial aspects). Legal assistance to communities, including educational measures regarding ownership rights and the related rules and regulations, may be important project inputs. The general relevance of the legal and regulatory aspects of ownership is increasing due to i) the higher level of financing involved in water system development, ii) the expansion of democratic institutions and iii) increasing multiple use and growing shortage of water.

It was stressed that ownership involves not only ***rights***, but also ***responsibilities***. Interest in rights without full awareness in responsibility is occasionally a source of problems. The aspects of ownership characterising sanitation systems may be quite different from those associated with water supply systems. Where community facilities are involved, questions of *responsibility* play a larger role. However, sanitation facilities in the rural context are mostly private, and ownership issues are less acute.

7.2 Indicators of ownership

To approach the issue of ownership in a more concrete manner, participants asked themselves how ownership is recognised. What is a reliable indicator of ownership? The result of the group exercise and the subsequent application of these indicators to the case of Mvula Trust are shown in Table 18.

A commonly evoked set of indicators relates to the functional condition of a water supply system. Indicators must work in both ways, of course, so that good functional condition would mean high ownership and poor condition low ownership. However, if the government were responsible for maintenance, good condition would not necessarily signify ownership by the community. As an indicator, condition must therefore be linked to the user's explicit (or implicit) responsibility for operation and maintenance. Condition is also influenced by the way in which a system is used by water consumers. The *reasons* behind the observed functional condition need to be examined in each case.

Table 18 Indicators of ownership

	Indicator	Applicability to the Mvula Trust case	Comments
1.	Systems functions well and people manage it Similar indicators include:	Too early to tell	Does good maintenance depend upon ownership?
	- Physical condition of system is good and community maintains it	Yes	Who ensures technical standards in long-term?
	- Physical condition of the system is better than expected	Yes	These indicators relate to moral ownership
	- Care and protection of the system by the community	Yes	
	- Repairs are made on the initiative of the community	Yes	
2.	Independence of external inputs and resources	No for inputs and capital costs; yes for O&M	There are no rural water systems without subsidy
3.	There are reactions in the case of outside interference	Yes	
4.	Control over resources including changes in the system	Yes	
5.	External, visible expression of esteem and pride in the system	Yes	
6.	There are benefits from the system and people have free, unlimited access to these benefits	Yes	Access to private connections is not open; to standpipes may be
7.	People have knowledge of locations and working of the system	Yes	
8.	People have knowledge of their obligations and rights	Yes	
9.	Community has a document showing ownership	Yes	Relates to legal ownership
10	There are witnesses to the proof of ownership	Yes	Relates to legal as well as moral ownership
11.	Community has the ability to sell all or part of the system	Yes	Relates to financial and legal ownership

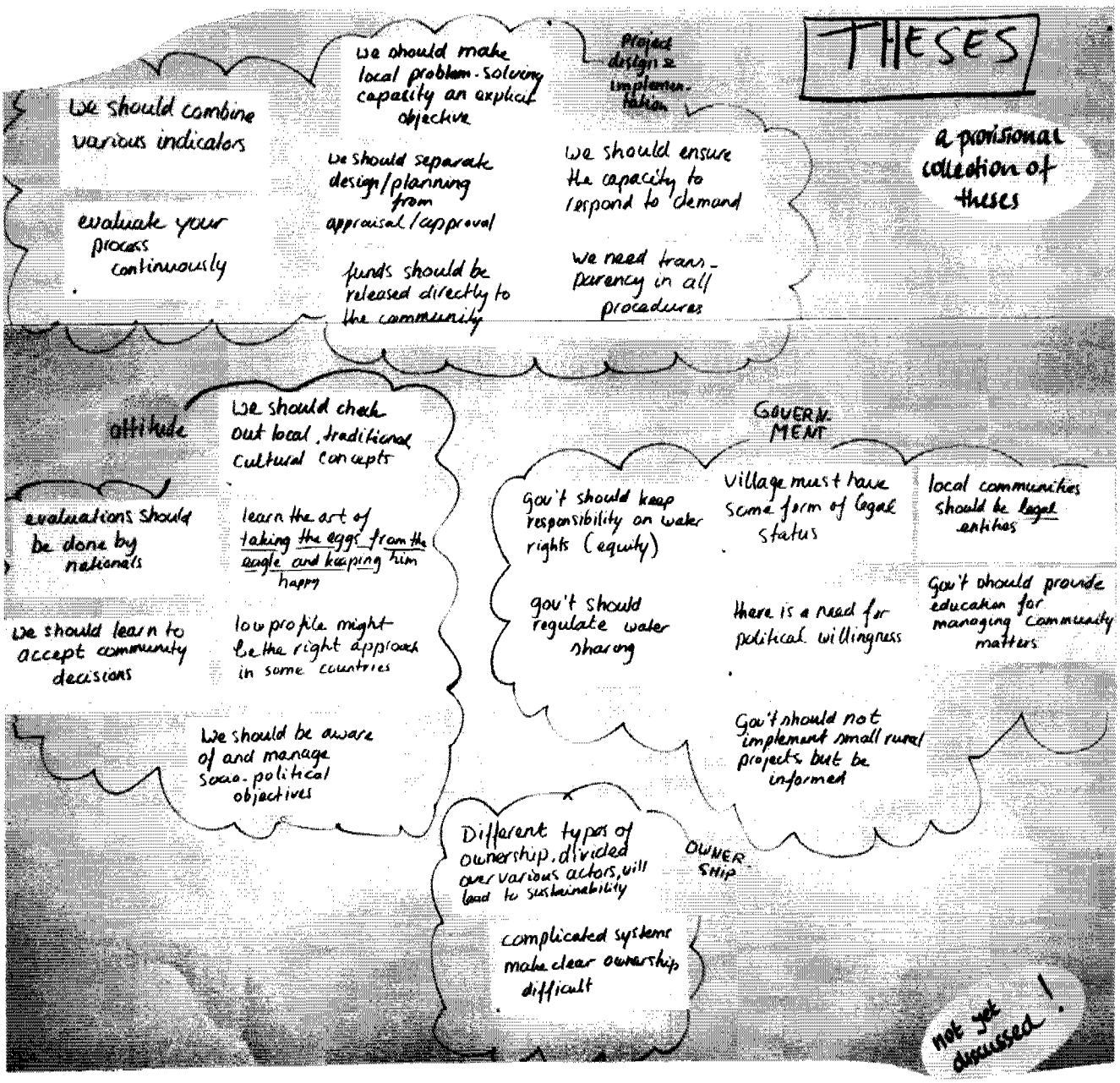
The relative independence of the users from outside resources is another factor which may be associated with certain aspects of ownership. Independence of capital investment is seldom possible in rural water supply systems, however.

Owners of a water supply system are likely to react to an outside intrusion, as when unauthorised persons begin to use their facilities. If users take steps to exclude non-owners, it is a good indication that they feel a moral and emotional ownership.

Ownership involves access to benefits, and the simple fact of unrestricted access is in itself a good indicator. At a symbolic level, expressions of pride in the system reveal identification with it and are usually related good maintenance. In practical terms, people's knowledge of the location and functioning of facilities—as well as their understanding of rights and obligations towards the system—are also indicators of ownership.

Finally, several indicators pertain to more formal—legal and financial—aspects of ownership: is there written proof or a witness of ownership? do people have the right to transfer legal ownership, i.e. to sell the facility?

Figure 14 Theses regarding ownership



7.3 Transfer of ownership

The various cases examined during the workshop revealed a range of possible approaches to ownership transfer. In ***conventional approaches***, facilities are planned, financed and constructed before being "handed over" to a user-organisation for operation and maintenance. All too often, as noted in Section 1, the transfer of ownership takes place in the formal or legal sense only. Transfer in the operational sense—which would encompass practical responsibility for service delivery, revenue collection and technical maintenance—is often quite inadequate. This commonly leads to poor operational effectiveness, inadequate maintenance and limited sustainability of the system.

Recognising that transfer of ownership depends upon adequate development of software, many projects provide community development inputs to improve users' capacity to manage water supply systems. Nonetheless, the basic sequence of the conventional approach remains one in which ***software transformation follows and lags behind hardware transformation.***

The case of Mvula Trust illustrates a quite different, ***community-managed approach*** towards ownership transfer. By channelled financial support for organisational and physical development directly to the user communities, the Mvula Trust enables them to become the managers—and owners—of development processes. The sequence is just the reverse of the conventional approach: ***software transformation—development of the community's management capacity—must reach a certain level before hardware transformation—physical development—is even possible.*** In consequence, transfer of ownership is not even required. Of course, ownership is not everything, and the capacity to manage planning and implementation does not necessarily imply the capacity to operate and maintain the system. Time will tell whether the software transformation enabled by Mvula's approach actually ensures the sustainability of the implemented water supply systems.

Between the extremes of conventional and community-managed approaches, many intermediate pathways are possible. In general, these ***participatory approaches*** channel financing through the implementing agents (as in the conventional approach) while ***attempting to initiate software transformation as early as possible and link it as closely as possible to hardware transformation*** (as in the community-managed approach). Important measures of participatory approaches to ownership transfer are:

- early engagement of user participation in the development process beginning with need identification, planning, implementation, operation and maintenance
- up-front contribution of the user-community to capital investment costs
- early instigation of community development and training inputs to ensure the community's capacity to play an active role in planning, implementation, operation and maintenance
- progressive, step-by-step hand-over of facilities and components to the users
- follow-up activities to strengthen community-based capacity for operation and maintenance.

7.4 Significance of ownership

What conclusions may be drawn regarding the use of indicators and approaches to ownership issues in general? Some of the main theses which were formulated and discussed in the workshop are pictured in Figure 14.

Project design and implementation: It was suggested that a combination of indicators need to be employed and that the internal process of ownership transfer should be evaluated continuously. Ownership does not necessarily mean that all functions need to be taken over by owners: the separation of design and planning functions from appraisal and funding approval, as in the case of Mvula, was found to be useful measure for ensuring effective project design.

Attitude: Transparency of decision-making is a general condition for enabling ownership transfer. Ownership depends upon specific social, cultural and political context, and design of ownership transfer process needs to be based on adequate understanding of these features. The political climate, in particular, may determine whether explicit, formal aspects of ownership should be given precedence, or whether low profile, implicit moral and emotional aspects should be stressed. In most cases, only a local person has required sensitivity to judge such issues.

Government: The role of government in promoting ownership is delicate. On one hand, government must maintain final responsibility for water rights and for ensuring equity of access to water. On the other hand, government cannot itself implement rural water projects on the required scale due to technical, financial and organisational constraints. As illustrated by

the case of Ghana, when government does attempt to provide rural water supply itself, it leads to unsustainable levels of operational responsibility and intractable problems of ownership transfer.

The main role of government is to ensure conditions—such as the legal status of village communities—which enable the ownership of water facilities and development processes by the users.

Ownership is not an end in itself. It is primarily a condition for ensuring the rights of water users and their access to water supply. As such, it is a means of empowerment. At the same time, ownership allows the clarification of responsibilities for water supply systems and is, as such, is a condition for their sustainability.

Lessons learned: Is CATWOE a useful tool for managing development projects?

Ueli Scheuermeier

Preliminary remark

I have been asked, as "resource person" of the Aguasan Workshop, to contribute a reflection on CATWOE as a management tool based on the Workshop experiences. I will try to do this from a systemic point of view, which seems justified for CATWOE. I must also say that the insights presented here would not have been possible without the Workshop. Furthermore, they emerged slowly during the weeks following the Workshop, while reflecting on the experience.

These remarks contain no definition or explanation CATWOE; for this, the reader is referred to Chapter 2 of the Workshop Report. I will make the point that CATWOE is less useful than other well-known tools such as GOPP for managing development projects. However, I now believe that CATWOE challenges us to break out of our ingrained ways of thinking about development. It can open new conceptual scope for thinking in terms of institutions as opposed to project—something I feel is long overdue.

Frustrations and resulting questions

Expectations regarding CATWOE were high, and the frustrations which accompanied the meagre results were correspondingly great. What actually happened?

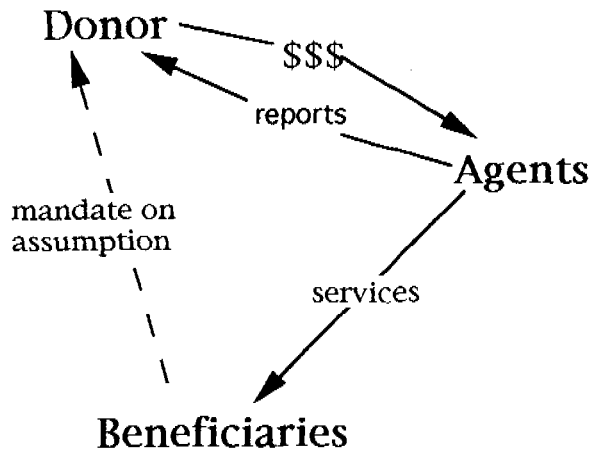
a. Were we frustrated due to a lack of experience in applying CATWOE, or
b. is CATWOE intrinsically ill-suited to the management tasks faced by development aid projects, or
c. does CATWOE challenge us to think in new ways about development—a challenge which we have, in fact, avoided?

Reflecting on the experience, I have the impression that the answer to all three questions is "yes". The most intriguing point is the last—the possibility that we missed CATWOE's potential usefulness with regard to development because we were too fixed in our established ways of thinking. This may sound quite speculative, but it is worth considering where we might have missed something...

The donor-triangle

Wherever there is a "donor", there is invariably also a beneficiary. Very rarely does a donor directly give to the beneficiary, however. Usually donors work through intermediaries such as government services, NGOs and, increasingly, private sector actors. These intermediaries—let's call them agents, because they make the things happen for the donor—are given the money by the donors to provide services to the beneficiaries (see Fig. 1). The donor does this on the assumption that he has an implicit mandate from the beneficiaries to finance the agents to provide these services. The donor has to think he has such a mandate, although in real life it is very rare that there is a real mandate which can be controlled by the beneficiaries.

Figure 1 The donor-triangle



The triangular relationship donor-agent-beneficiary is prevalent in development aid. During the Workshop, I started to get interested in the mechanisms of interaction within this triangle. I have since become increasingly fascinated by the fact that all stakeholders have very strong reasons for maintaining the triangle, although it severely limits "beneficiaries'" struggle for emancipation and independence. Not surprisingly, this triangle created all sorts of problems when we attempted to apply a tool from the commercial world to development assistance.

The main problem caused by the donor-triangle in relation to CATWOE concerned the identification of clients. In commercial terms, a client is the person who is willing to pay for the products of the system. Sensing that beneficiaries would never be clients, we attempted to reformulate, asking "Who has to be happy with the operation of the system"? However, this made matters even worse, as both the donors and the beneficiaries had to be "happy". This confusion about the clients caused further confusion regarding owners and actors. Owners, who are defined by CATWOE as people who

can stop the system, suddenly become clients, or people who pay for its products. But, then, what is the role of the beneficiaries, except to be, well, "beneficiaries", who depend upon a "benefactor"? But that didn't get us anywhere! Confusion upon confusion. No wonder we decided that no useful insights could be gained from CATWOE, and that the tool is not applicable to situations characterised by a donor-triangle.

Is it possible to modify CATWOE so that it applies to triangular situations? During the Workshop, I searched unsuccessfully for ways of doing this. I am now convinced it will not be useful to even attempt an adaptation of CATWOE, because that is not where the problem lies.

The real problem is the donor-triangle. Dismantling the triangle presents a daunting challenge, however, because there are very strong reasons why donors, agents, and often also beneficiaries, insist on interacting in this way. Any attempt to challenge these relationships will meet with strong, sustained and irrational resistance. Nonetheless, the Mvula Trust indicates a possible strategy.

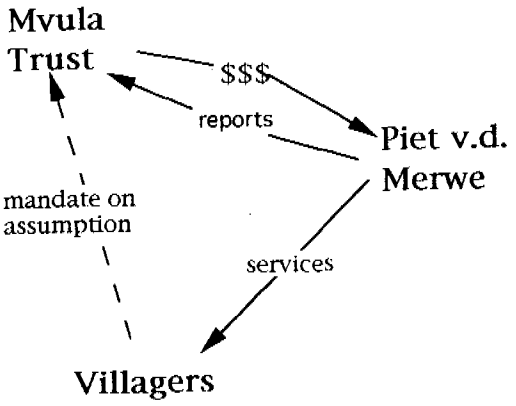
Mvula Trust: avoiding the donor-triangle?

The fascinating thing about the Mvula Trust approach lies not only in the improved linkage between donor and community (see Fig. 2). The systemic strength of this approach derives from its capacity to cut through the collusion between donors and agents, empowering beneficiaries to interact as full-fledged clients on normal terms with service providers. Those three village elders with a cheque in their pocket knocking at the door of the engineer Piet van der Merwe—that is something new for a development project. Piet has to think really hard about learning Xhosa, or he might see that cheque walk right back out the door. Those village elders have to want *his* services, or he won't get the contract. He doesn't bother with the Trust, because if he can't convince the elders, he can forget about the Trust.

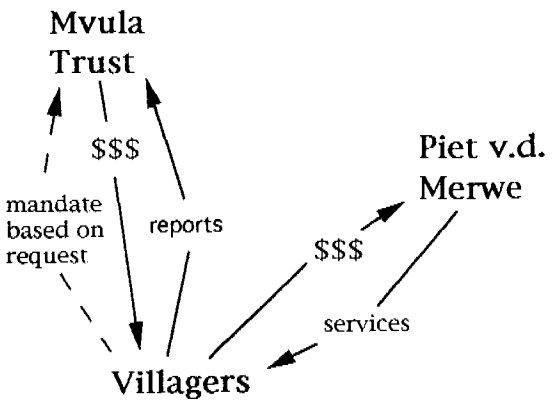
With the Mvula Trust approach, all the confusion regarding owners, actors and clients is sorted out quite nicely—at least at the operational level of village water supply schemes, which is where it counts. That is where the focus should be, as ownership is generated in the village. Furthermore, even at the level of the Mvula Trust itself, the situation is clear, since it is the government which channels development money through the Trust. Here, of course, we again have another triangle, with government as donor, the Trust as agent, and the village committees as beneficiaries. However, in the newly democratic situation in South Africa, the government has an explicit mandate from the villagers—a straight political-administrative mandate with no implicit assumptions as in the typical donor-triangle. Villagers are the ultimate clients of the Trust, since the government explicitly and rightly acts on their behalf. Ownership is achieved, this time, by political means.

Figure 2 Interactions in the case of Mvula Trust

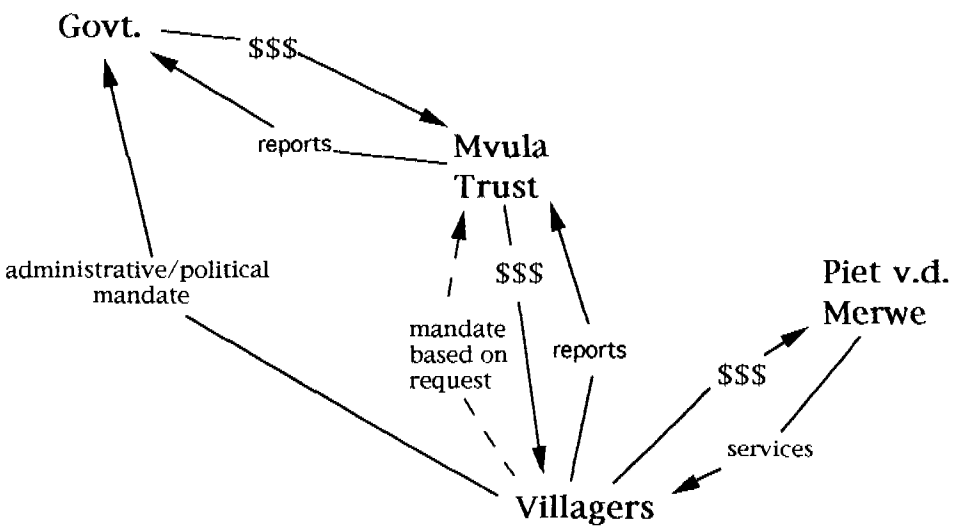
Typically expected interactions



Actual village-level interactions



Interactions, including the higher level at which Mvula Trust is an agent and government is an explicitly mandated donor



CATWOE and the donor-triangle

Let's look back at CATWOE. In what way did it contribute to these insights? I now believe that CATWOE cannot simply be dismissed as inadequate to our purposes. Quite the contrary: for me, CATWOE emerged as an instrument which may shed light on weaknesses in the channelling of resources within development projects. It was the attempt to use CATWOE, plus the Mvula Trust presentation, which triggered the concept of the donor-triangle. I think that we have to try to eliminate the old and deeply entrenched mechanisms of the donor-triangle—and CATWOE can help us to discover these triangles and to check whether we have actually dismantled them.

Institutional versus project approaches

In our professional careers, most of us have become used to thinking and working in the framework of projects. The jargon we use reveals the basic mindset behind our way of approaching the challenges we face: needs, problems, solutions, objectives, criteria for success, activities, etc. Thinking in terms of a *project* (literally "thrown ahead") implies an orientation towards problems, objectives and solutions. Our pragmatic approach to development focuses on reasonable objectives, the best means for reaching them, and the criteria for judging when we have reached them. We are all familiar with conceptual tools for identifying problems, defining objectives, planning solutions and implementing activities which achieve our objectives: GOPP, SOFT/SEPO, and so forth. CATWOE made a poor showing in comparison with these instruments, and we can safely say that it is not a very useful tool for managing projects.

However, CATWOE was not intended for this kind of task. It does not deal with concrete problems or the design of solutions. CATWOE deals with functions and roles—the reasons why an institution, whether formal or informal, exists and operates. During the Workshop, the basic difference between project-orientation and institution-orientation was not at all clear. When reflecting on the actual cases, our project-orientation thus caused us to expect CATWOE to help us to determine what should be done and how to do it. The results were frustrating. Could it be that our ingrained orientation towards projects prevented us from grasping the potential of CATWOE in dealing with the challenge of institutional identity? I think so.

Searching for analogies to better grasp the project-institution dyad, two examples come to mind: roads and ships.

The example of roads

When building a road, it is most useful to think in terms of a *project*. Point A is to be joined with point B. We project the construction: plan it, set up an organisation to build it and then implement the plan. The purpose of the organisation is the construction of that road. Once that purpose has been

achieved, the project comes to an end; its reason for being—defining a useful objective and reaching it efficiently—no longer exists.

Then comes road-maintenance, which is usually undertaken by some road department. Road maintenance is more usefully approached in terms of ***institutions***, rather than projects. Continuous activities of an institution are required to keep the road in satisfactory condition. It is not very useful to think in terms of objectives to be reached (a typical GOPP-formulation would be "the road is maintained"), because as soon as they are reached, they will have to be reached again, and again. The purpose of the road maintenance organisation is not to achieve some objective, but to continuously fulfil a specific role or function. The challenge is to define this role or function in such a way that it is continuously and clearly identified with the organisation—and vice versa.

I am now no longer surprised that we are so good at building roads and water supply schemes and conducting training programmes, etc., and why we are not nearly as good at building institutions which fulfil continuous functions such as maintenance.

The example of ships

Cross the ocean to reach a specific port, trade, come back, disembark, trade again and end up with a profit—that is a project. Build a ship, outfit it, provision it and, finally, put in a decent crew—that too is a project.

But building a ship, outfitting it, provisioning it, finding a crew and finally setting to sea without knowing what is behind the horizon, with the intention of coming back in five years, or perhaps in 7 years, or perhaps not at all—that is quite another matter. It is exactly what some famous old sea captains did: people like Francis Drake, Barents, Bering, Tasman and—probably the last—James Cook. I have become increasingly fascinated by people like Drake and Cook. I believe they were the best soft-systems managers of all times. That is not to say that they did not know their hardware! They were the cream of the crop in that discipline, too. Certainly, they also thought and worked in terms of projects whenever it was useful, when a specific objective had to be reached. There were many good sailor captains, some of them pirates, who knew very well how to reach a specific place and accomplish a pre-defined task. What made Drake successful, and famous, was his proficiency in building, running and maintaining a highly complex organisation—all contained on a ship—which could go anywhere and stay away any length of time, adapting and mastering all kinds of unforeseen challenges. This kind of mastery cannot be achieved by project-thinking alone.

The secret of Drake's and Cook's success was the careful design of intricate interactions between various sub-systems on their ships. They assigned clear-cut functions to each sub-system and to the people assigned to manage them (steerage, sails, kitchen, food and water, health maintenance, armaments, carpentry, religion, navigation, trade, blacksmith, science, accommo-

dation, etc.). Each man on board knew his role and functions exactly, and understood how they related to the whole. Nobody had any doubts about why he or his function was needed. On the other hand, none of the crew knew very much about ***objectives***—except maybe "let's rob the Spaniards" or "hey, we're going around the world". Every crew member was encouraged to interest himself in functions and roles other than his own. The reason for this was systemic rather than democratic; with his small crew, Drake needed a redundancy of available skills. Without this, his ship-based organisation would not have survived the frequent crises it encountered.

My point is that Drake and Cook ran ***institutions*** or, rather, whole ranges of highly diverse institutions whose functions were so masterfully integrated that they became powerful over-institutions in their own right. These sea-going managers were deeply concerned with functions and roles; they thought of projects and objectives in tactical terms only. Their basic strategy was to maintain the viability of various functions and their interactions. I have the impression that CATWOE might have appealed to Drake. Or perhaps he would have dismissed it, laughingly, as some typically befuddled nonsense from the Spanish Inquisition...

Conclusions:

CATWOE and institutional theapproach

CATWOE cannot be dismissed as irrelevant to the challenges of development assistance. On the contrary, CATWOE challenges us to think about development in new and original ways; it requires us to pay more attention to ***institutions*** in addition to our more familiar ***projects***:

- Thinking in terms of ***projects*** is appropriate when clear-cut problems must be solved and clearly stated objectives achieved; the Workshop showed that CATWOE is poorly suited to this kind of challenge.
- Thinking in terms of ***institutions*** is appropriate when a continuous function such as maintenance must be carried out. Such functions are best achieved by an institution whose members have a clear understanding of the institution's purpose, its position in overall context and its relationships to the other institutions. This may be called institutional identity.
- CATWOE may be an effective tool for establishing institutional identity (or "corporate identity", as would be called in the commercial sphere). In the Workshop, we had insufficient experience for assessing the usefulness of CATWOE for this purpose. This is partly because, at the time of the Workshop, the difference between project-thinking and institutional-thinking was not sufficiently clear. Insight into this distinction may be regarded as an outcome of the Workshop (see Table 1).
- Finally, CATWOE may help us to identify and deal with problematic triangular interactions between donors, development agents and beneficiaries.

Table 1 Project and institutional approaches

	Project approach	Institutional approach
Useful tools	GOPP, SEPO, etc.	CATWOE
Reason for existence of the system	Objectives and tasks: "Where do we want to be, what do we want to achieve, and how do we get there?"	Functions and roles: "Why are we needed, how do we contribute to the overall picture?"
Attitude towards time	Temporary: "Let's get this finished within the deadline and within budget."	Continuous: "We are here to stay and improve our ways of doing our job."
Mindset for getting things done	Operational: "Okay, we need this and that and the other thing, and first we do this, then that, and finally that."	Institutional: "We have to be good at doing our job."
Reasoning behind activities	Pragmatic: "What do we need to do in order to reach the objectives?"	Idealistic: "What makes us think that this activity will improve the way we fulfil our job?"

Annex 1: Workshop programme

Day Date		Activities
Mon. June 24	Afternoon	Opening: workshop programme and objectives Self-presentation of the participants Introduction to the workshop theme Description of a "soft systems" tool: CATWOE Application of the tool to the case of PIDOW
Tues. June 25	Morning	Review of the previous day ("transformations of bread") Case studies: Ghana, Sri Lanka, Cameroon, Mozambique, Lesotho
	Afternoon	Group work on the case studies: Delimiting the system Applying the CATWOE tool Visualising the results
Wed. June 26	Morning	Review of the previous day ("crossword") Discussion of the work group findings in plenum Findings of the "task force" on ownership transfer Approaches to ownership:
	Afternoon	Excursion to the Eco-centre at Schattweid
Thurs. June 27	Morning	Review of the previous day ("magic of CATWOE") Indicators of ownership Case presentation of the Mvula Trust, South Africa
	Afternoon	Group work: comparison of Mvula process to cases Discussion of group work findings: Mvula and ownership indicators
Fri. June 28	Morning	Review of the previous day ("who owns the football?") Elaboration of theses Indonesian experience: NGO and government approaches
	Afternoon	Group work on selected theses Discussion Evaluation of the workshop Close

Annex 2: Workshop participants

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Annex 3: References

Checkland, Peter B., "Soft Systems Methodology", in *Human Systems Management* 8, IOS, 1989, pp. 273-289

Previous Aguasan Workshops

1.	**Water Decade**	**1985**
2.	**Participation and Animation**	**1986**
3.	**Sanitation and Health**	**1987**
4.	**Operation and Maintenance**	**1988**
5.	**Monitoring and Evaluation**	**1989**
6.	**Sustainability of Drinking Water Supply and Sanitation Projects**	**1990**
7.	**Monitoring and Evaluation**	**1991**
8.	**Communication in Development Cooperation**	**1992**
9.	**Water is no longer a free resource: Who pays?**	**1993**
10.	**Sustainable Water and Sanitation Projects through Fair Negotiations**	**1994**
11.	**Urban Sanitation: the Challenge to Communities, Private Sector Actors, Local Governments and External Support Agencies**	**1995**

Annex 4:
Suggested topics for the Aguasan Workshop '97

Legal systems:

- Rural communities' legal rights with regard to WS&S
- Water rights in the context of different legal and social systems
- Levels of legalisation of user rights and obligations with regard to WS&S

Environmental and economic issues:

- Water, sanitation and the environment
- Environmental economics and WS&S systems
- Achieving sustainability in a changing environment
- Water resource management: achieving sustainable water household
- Watershed development and resource management

Private sector:

- Involvement of the private sector in WS&S development
- Role of the private sector in WS&S development
- Role of intermediaries (NGO and private enterprises) in WS&S

Technical and methodological issues:

- Relation between technology the implementation processes in WS&S
- Contribution of management tools to WS&S development
- WS&S in emergency and rehabilitation situations

Institutional issues:

- Role of government in community empowerment
- Working with government—getting governments to work
- Role of government: implementation versus incentives in WS&S development

Gender issues:

- Women's participation in WS&S systems
- Gender aspects of WS&S systems

Education and human resource development:

- Hygiene education: balance between extensive and intensive (expensive?) approaches
- HRD in the WS&S sector