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Community Participation in Water and Sanitation

Concepts, strategies and methods

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INTERNATIONAL REFERENCE CENTRE
FOR
COMMUNITY WATER SUPPLY AND SANITATION

COMMUNITY PARTICIPATION IN WATER AND SANITATION

CONCEPTS, STRATEGIES AND METHODS

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I. INTRODUCTION: THE FORMS OF COMMUNITY PARTICIPATION

OBJECTIVE OF THE MONOGRAPH

The objective of this report is to examine the factors of a socio-cultural and political nature which must be taken into account by an agency or government which is considering the use of community participation methods in the planning and implementation of community water supply and sanitation schemes in developing countries. It draws on the literature concerning community participation and education in water supply, summarised in another recent IRC publication (van Wijk-Sijbesma, 1979a)*, and on the experience of community participation in other fields, especially that of health. There are serious deficiencies and gaps in the literature: it does not by any means provide answers to all relevant questions. Therefore this report will also draw upon the more general social scientific literature on rural communities, and its conclusions must be regarded as tentative.

The report will discuss (a) the specific forms which community participation can take in water supply and sanitation projects, (b) the circumstances under which it may be appropriate to encourage each of these forms of participation, and (c) the difficulties which may be expected.

DEFINITION OF COMMUNITY PARTICIPATION

Despite the great diversity in the objectives sought through popular participation, and the different ways in which the term has been understood and interpreted, a certain consensus has

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* A second revised edition will be published mid-1981 in English. French and Spanish versions are also under preparation

begun to emerge upon a working definition among some of the international organisations involved in development. According to this definition, participation has three dimensions: involvement of all those affected in decision-making about what should be done and how; mass contribution to the development effort, i.e. to the implementation of the decisions; and sharing in the benefits of the programmes (World Bank, 1978)*.

These ideas can be understood so broadly as to be referring to the entire political and economic process of the country: popular participation then becomes another term to designate democracy, full employment or access to the means of production, and an equitable distribution of income. There is a large gap between these general (macro-societal) goals and the kinds of activities typically carried out in the name of participation. Indeed, there appears to be a real danger that the confusion of the broad goals with specific activities such as the founding of cooperatives, local community development committees, literacy or health education campaigns, or allowing people to choose the layout of roads or waterpipes in their neighbourhood (World Bank, 1978) will divert attention away from the broad goals or give a spurious impression that they are being achieved.

Therefore, it has to be made clear that in discussing community participation here we are not concerned directly with these broad goals of democracy, employment, or income distribution: they must be pursued separately. The only exception is where community participation projects contribute - usually in a minor way - toward these goals.

* A fourth element is sometimes considered: namely, local participation in evaluation. However, this may be considered part of the decision-making process.

Then, of the three dimensions mentioned, the sharing of benefits is of a different order: it does not distinguish projects in which services are delivered to the population, from those in which the population takes an active part. Therefore, while bearing in mind that the equitable sharing of benefits is essential, we take community participation to be defined by involvement of the local population actively in the decision-making concerning development projects or in their implementation.

Finally, involvement of the population in the physical work of implementing a project can hardly be considered as community participation unless there is at least some degree of sharing of decisions with the community. Thus, when an outside agency remains in total control of the process and merely calls upon the beneficiaries to give their labour directly, one cannot speak of community participation even though there is an element of self-help labour.

As a WHO report puts it: 'In the old ideology, "involvement" was conceptualized too often as an effort on the part of individuals to assist in the implementation of plans already made and targets set vertically. This kind of involvement prescribed passive acceptance of services and provision of support in cash or in kind, in giving money for a pump, digging a well for a water supply, or laying bricks for a health centre or a school. For some, it was a means of cheap labour and was aimed mostly at rural areas. The dynamics of a changing society, however, demand much more than mere acceptance, allegiance, and unpaid labour.

The new type of involvement requires identification with the movement, which grows only out of involvement in thinking, planning, deciding, acting and evaluating, focussed on one purpose, namely socio-economic development, of which health is only one part - a major part nonetheless. It, indeed, is a mental process as well as a physical one'. (WHO 1978, 4)

It is also necessary to make a distinction between the participation of some local individuals (beneficiaries) and the participation of the organised community as such. The word "community" denotes a social entity, organised in some fashion however loose and informal, and with some sense of identity, not just the inhabitants of a locality.

On the other hand, it may be unrealistic to insist that "true" community participation is only achieved when the local people are in full control of the process or decide entirely for themselves which activities should be embarked upon. It would be difficult for a sectoral agency of government, such as a water authority, to put into operation such a concept of community participation. Autonomy of this sort may be considered a special form of participation, to be achieved only under particular circumstances.

THE FORMS OF COMMUNITY PARTICIPATION

Many different types of activity are pursued under the designation of community participation. The classification which follows will provide the main categories around which this monograph is structured: each form of participation will be discussed in terms of its advantages and disadvantages, the circumstances under which it is possible and desirable to try to bring it into operation, etc.
The categories are practical: they simply group activities which appear to be similar in their essential social features. It is hoped that a classification of this sort can provide a framework for deciding upon appropriate forms of participation in any situation, without pre-judging the question through assumptions made in the classification itself.

In this classification, the first five items are forms of participation in which the role of the external agency remains

paramount. In the last five, the role of the external agency is more limited, often to that of advisor or educator ("animator"), or the initiative is in the hands of the community. In general, the order in which the items are presented is that of increasing depth of involvement on the part of the community members, but this is not a single dimension, and there may be greater or less depth of involvement within each of the categories also.

DIAGRAM 1

The Forms of Community Participation

1. Consultation
2. A Financial Contribution by the Community
3. Self-help Projects by Groups of Beneficiaries
4. Self-help Projects Involving the Whole Community
5. Community Specialised Workers
6. Mass Action
7. Collective Commitment to Behaviour Change
8. Endogenous Development
9. Autonomous Community Projects
10. Approaches to Self-sufficiency

1. CONSULTATION

The basic means of giving the community some voice, involving it in desision-making. Main rationale: to ensure that the project or programme introduced by the outside agency is adapted to meet the needs of community members, and to avoid difficulties in implementation. It may involve:

1a. Consultation with community representatives or leaders only. It may well be considered that such consultation does not amount to real community participation unless the community is one where the decisions formally made by representatives or leaders are the result of wider consultation and consensus within the community, and unless the community is thereby involved in decision-making on significant aspects of the project which is being introduced.

1b. Consultation with all sections of the community. This is primarily a matter of ascertaining the views of those sections of the community which may normally be excluded from decision-making (women, certain ethnic minorities or low caste groups, the poorer sections), whose interests may not be genuinely represented in the existing processes of decision-making in the community. The rationale: to ensure that the project meets their needs also. This is not always easy, and there are differing views on the emphasis which can or need be given to it.

2. A FINANCIAL CONTRIBUTION BY THE COMMUNITY

Cash collections made by and within the community, generally prior to or at the time of implementation of a project, usually as a contribution to capital construction. Excluded, as not really constituting community participation, are cases which amount to a payment by individual families for service, even when it is an advance payment.

3. SELF-HELP PROJECTS BY GROUPS OF BENEFICIARIES

In these projects a specific group of local inhabitants contribute their labour (and perhaps other inputs) to its implementation, while there is also the assistance of an external agency.
Those who contribute will be recompensed by reduced fees for the services they receive, while non-members pay more.

4. SELF-HELP PROJECTS INVOLVING THE WHOLE COMMUNITY

Projects in which every family in the community is expected to make a contribution (usually in labour), while there is also an input from an external agency. Food-for-work projects may perhaps be included here, though the element of community participation may be considered slight if it consists only of labour which is paid in cash or kind.

5. COMMUNITY SPECIALISED WORKERS

The training and appointment of one or a few community members to perform specialised tasks (e.g. as community health worker, or operator of a community water supply system). The training and technical supervision are carried out by an external agency, but some form of community authority is usually also exercised over the specialised workers.

6. MASS ACTION

Collective work in the absence of a major input from an external agency. Often such actions are directed at environmental improvements (e.g. to drain waste water).

7. COLLECTIVE COMMITMENT TO BEHAVIOUR CHANGE

Cases where a community makes a collective decision to change customs or personal habits, and collective social pressure is

exercised for the realisation of such changes. Examples range from penning of domestic animals to construction and use of latrines, or to the reduction of excessive expenditures in connection with weddings, funerals, etc. While changes of behaviour may of course occur in other ways, community participation is involved when an explicit decision is collectively taken.

8. ENDOGENOUS DEVELOPMENT

Cases in which there is an autonomous generation within the community of ideas and movements for the improvement of living conditions - as opposed to stimulation by outside agents. The community may, however, have recourse to external agencies to help with implementation, or indeed press for such help. On the other hand, where this is simply pressure for services to be provided, it hardly qualifies for the term "community participation", though in a wider sense this is an example of political participation.

9. AUTONOMOUS COMMUMITY PROJECTS

The ambiguous "self-reliance" is often understood in this sense: projects where any external resources are paid for by the community with funds raised internally, including the hiring of any outside expertise or professional staff. Such projects are therefore under community control.

10. APPROACHES TO SELF-SUFFICIENCY

Projects in which the objective is to satisfy local needs as far as possible by using local materials and manpower directly, not by purchasing goods and services from outside. "Self-reliance" is also sometimes understood in these terms.

II. DESIRABILITY OF COMMUNITY PARTICIPATION: A DISCUSSION OF THE ARGUMENTS

In discussing the application of these forms of community participation in the field of water supply and sanitation, it is first of all necessary to distinguish between four situations: the arguments for participation which apply in these different situations themselves differ somewhat.

1. That which prevails where an agency responsible for rural water supply or sanitation is able to offer substantial assistance, at least, in the solution of the water and sanitation problems of a community in question; and the community can be expected to accept the assistance. This is the most usual situation encountered in practice by most water agencies, and will be dealt with at greatest length here. This case will be referred to as that of the "water agency using participatory methods".

2. That which prevails where a government's policies call for local initiative over the solution to water and sanitation problems, local communities being expected to rely largely on their own resources, but with guidelines and some help being available from higher levels of government.
   Community initiative is fostered through the regular organs of local government, and possibly also through party or other political organs linked to government. This case will be referred to as that of "government-stimulated community action".

3. That which prevails where a voluntary agency calls for local initiative, local communities being expected to rely very largely on their own resources, but with advice and some help being available from the agency.
   This case will be referred to as "voluntary agency-stimulated community action".

4. That which exists where a community adopts without outside stimulation an autonomous solution to its water/sanitation problems. This it may do when no outside help is available, or in rare cases in order to preserve its autonomy from government. In either case, this situation will be referred to as "autonomous community action".

These four situations are, for many of those involved in the practice of community participation, different circumstances in which they work and which they cannot alter or influence. At the same time, however, for a government or voluntary agency there may also be a choice of approach toward community participation - between favouring participatory methods within established technical agencies or stimulating a broader type of community action. Individuals may be able to choose which type of situation they wish to work in. Some of the misunderstandings and debates over what constitutes participation would be clarified by relating them to these situations. Some of the arguments for participation apply to all these situations. Other apply to only some of them, and can therefore also be regarded as arguments for one or other approach.

WHY SHOULD COMMUNITY PARTICIPATION BE CONSIDERED?

The case for community participation in many fields of development is now well recognised. In the field of health services, for instance, it is a central aspect of the concept of Primary Health Care, which has been adopted by the World Health Assembly as the organising principle around which to "bring health to all by the year 2000". The advantages which are foreseen as arising from community participation include the expectation that governments' budgetary resources can be stretched or complemented by the efforts which can be made within local communities, but they go well beyond this.
Altogether, at least ten distinct reasons have been advanced in favour of participatory methods, as discussed below. All of the

reasons will not be found equally valid from every point of view, while some may be thought to apply in some situations and others in different ones, but they are not in general mutually exclusive, and taken together they make a strong argument.

It must be emphasized that the brief discussions of each of these ten reasons, which follow, are aimed at presenting a brief and, to the extent possible, a balanced view of each one, not, as in much of the literature on the question, a one-sided and over-simplified argument in favour.

DIAGRAM 2

Ten reasons advanced for Community Participation

1. With participation, more will be accomplished.
2. With participation, services can be provided more cheaply.
3. Participation has an instrinsic value for participants.
4. Participation is a catalyst for further development.
5. Participation encourages a sense of responsibility.
6. Participation guarantees that a felt need is involved.
7. Participation ensures things are done the right way.
8. Participation uses valuable indigenous knowledge.
9. Participation frees people from dependence on others' skills.
10. Participation makes people more conscious of the causes of their poverty and what they can do about it.

1. MORE WILL BE ACCOMPLISHED

Much of the impetus for the movement toward community participation derives from the observation that conventional services have not been extended to the rural areas, or even the urban poor, at a fast enough rate. If people are to receive the services (also increasingly seen as their right) within the foreseeable future, it is regarded as necessary that they themselves take action to provide them in as self-reliant a way as possible.

For some proponents, the implication is that the conventional service agencies are unlikely to change their approach, so that communities will have to organise themselves to meet their own needs if they are to be met at all. This pessimistic view of the potential for the re-orientation of government agencies to the needs of the poor is obviously more justified in some countries than in others. It is in part a question of politics: whether the government represents or is genuinely committed to the interests of the poor majority of the population. In the second place, it is also a question of the interests and attitudes within the staff of government agencies: they are often able to exert a considerable influence.

Naturally, the pessimistic view of government is held more often, or at least more openly, by those working in voluntary agencies than by the government personnel themselves, and for many voluntary agencies within developing countries, as well as for some of the sponsoring agencies in Western Europe and North America, the principle of community participation and self-help is seen as the one viable alternative to dependence on the voluntary agency for charity.
The function of the agency is consequently seen as being to foster community organisation for self-reliance in such a way that it will become self-perpetuating in each community as

rapidly as possible: the agency will then be able to withdraw in order, perhaps, to accomplish the same task in a new set of communities. The argument here is for voluntary agency-stimulated community action rather than simply the use of participatory methods.

The view that more will be accomplished if the energies of the people are harnessed is by no means confined to voluntary agencies, however. It is a view which now lies at the heart of much development thinking, following disillusionment with older assumptions that development would flow from capital investment in "modern" economic and social institutions. A number of countries have launched programmes to raise the productivity of the poorest and least productive, with an emphasis on public participation. An example is the Indian Integrated Rural Development Programme, which also stresses the need for organisations of the poor (Azad, 1978). In Africa, the Tanzanian approach to self-reliance is well known; but it is not confined to that country.

But reliance on the people's energies as the primary motive force for development may be said to have originated and been carried furthest in countries with socialist socio-economic systems. In the People's Republic of China, Mao's "mass line" was a guiding principle of that country's development, and achieved full expression in the field of water and environmental sanitation (with the "Patriotic Health Movement") as well as in simple health care (with cooperative medicine and barefoot doctors). Viet Nam in particular has followed a broadly similar policy of its own (McMichael, 1977), with popular participation in health closely integrated with provision of services by the Ministry of Health. The argument in these cases is for government-stimulated community action.

In some countries, for instance in West Africa, provision exists for district executive offices to provide materials such as cement and expert help for village communities which

undertake the building of classrooms or the digging of wells. It would seem that a very strong commitment at the national political level is necessary for a policy of government-stimulated community action to achieve any large-scale success - and while the rhetoric is generally approved, the reality is one of low commitment in most countries, reflected in low budgets for the community development agencies and district executive offices charged with supporting community activities in this way.

Also, technical ministeries and departments have generally shown little enthusiasm for these small-scale local improvements, preferring to concentrate on large- and medium-scale projects. Thus, while it may be true that more can be accomplished through the population undertaking self-reliant action, there is a need to establish an adequate structure to stimulate such action, and this in itself is a large undertaking and a significant departure from the administrative arrangements and habits of most Third World states.

On the other hand, when it is a question of a water agency using participatory methods, the argument that more can be accomplished must be based on a rather different premise, namely that the gain of a community contribution will outweigh the costs involved - the additional staff required in the administration of such a programme of liaison with communities, etc.

We shall return to this question below.

2. SERVICES CAN BE PROVIDED AT LOWER COST

Perhaps this is only another way of looking at the foregoing argument: if services can be provided at lower cost to each community, they can be provided to more communities altogether. However, the reference to the comparative cheapness of a participatory approach is usually made from the perspective of government, and implies that resources are saved by a govern-

ment agency which uses community contributions to help complete its projects, and are released for completing more projects or for other government purposes in general. Given that the cheapness is achieved only in part by a reduction of total costs, it is in part a transfer of a burden in real resource terms onto the community, relative to the position that would have obtained if the service had been provided directly.

It is therefore of the greatest relevance to ask who benefits from this: it may involve a redistribution from the relatively poor to the relatively rich. In feudal societies, unpaid corvée labour could be called upon as a cheap way of meeting the requirements of the manor or the state, and there have been recent historical parallels in most parts of the developing world. The main difference between these practices and a labour contribution in a context of community participation is that in the latter case it is the contributing members themselves who should benefit: but in practice it cannot always be taken for granted that they will.

Cost reduction need not only be a question of not paying for labour, however, but of adopting organisational and technical solutions which are cheaper and may also be more appropriate to the local environment. Village health workers, for instance, may actually be more effective than doctors in the village, if they are well trained for the circumstances in which they will work: they understand the environment, and are typically well motivated to work within it.

3. PARTICIPATION HAS AN INTRINSIC VALUE FOR PARTICIPANTS

Apart from the more instrumental advantages of community participation as a means to achieve other ends, it is often argued that people simply should be able to participate actively in the processes which affect them, having a voice in the decisions that are taken, and a part in their implement-

ation. Apart from the intrinsic satisfaction that this may bring, and the avoidance of feelings of alienation and powerlessness, we may also mention the possibility that an increase in cooperative interaction will lead to a more united community. These are, however, probably not measurable effects, and the increased activity will provide occasions for friction as well as for harmony. Even participation may have little intrinsic value if it is, in practice, on terms defined by others.

Thus, while the argument for community participation applies both to the use of participatory methods by a water agency and to "community action", in the former case it is only valid if the aim of community "involvement in thinking, planning, deciding, acting and evaluating" is taken seriously by the agency.

4. CATALYST FOR FURTHER DEVELOPMENT EFFORTS

This argument is more specific than the postulate that community participation will lead to a more united community. It is thought that the organisational patterns created for one project - the committees and the arrangements for voluntary labour - as well as the enthusiasm generated by one success, will provide both the means and the stimulus for further efforts to tackle other needs. This assumes that it has been the organisational framework and the stimulus that have been lacking in the past, while other constraints are less important. Among the other constraints which should not be discounted are those stemming from social structure (such as the fear which people might reasonably have that others will gain more than themselves), or a lack of worthwhile projects which can realistically be completed by the community without outside help. Where these constraints do not exist or can be overcome - where, for instance, outside help is made available for further projects - there are certainly examples of com-

munities which have completed further development efforts in this way. We shall return to this question in the context of a water agency using participatory methods, in Chapter IV.

In the stimulation of community action, two relevant questions are:

1) Does the external agency continue to offer stimulus and help?
   It has often proved illusory to expect a community, organized for one project under outside stimulus, to carry on with other projects when that stimulus is no longer there. (In some cases, a very active local resident may take over the role of stimulator).
2) Are other problems as salient? It is natural that a community may cooperate to solve a most pressing problem such as its need for a water supply, but be less inclined to cooperate for other purposes which may not be recognized by all as necessary. It has been suggested in some places, particularly in Eastern Africa, that people have very reasonably become resistant to further demands for contributions for communal projects.

5. PARTICIPATION LEADS TO SENSE OF RESPONSIBILITY FOR PROJECT

It is thought that when people have taken an active part in the planning and/or implementation of a project, they will collectively consider the completed project as their own, have pride in it and a sense of responsibility for it, and therefore use it, do so responsibly and avoid damaging it, and do their best to maintain it. The argument is based in part on the familiarity which each community member will have gained with the project, but in greater part on the idea of the emotional investment he will have made in it. There is a question whether people always do feel this way: in some cases, it is suggested on the contrary, villagers feel that they have made their contribution at the construction stage and it is now more than

ever the responsibility of government, the usual provider of such services, to maintain the project (Feachem et al., 1978). In any case, it is quite clear that if maintenance is to be carried out, special provision must be made for it, and the sense of responsibility which the community may feel is not enough. As in some of the other expectations held about community participation, outsiders expect the community to respond as they themselves would, or think they would; but communities are not individuals. To speak of a community having a commitment to a project can only be a metaphor for a range of attitudes among individual community members, none of whom may value the project particularly highly in relation to his own private affairs. For further disscussion, see Chapter IV.

6. PARTICAPATION GUARANTEES THAT A FELT NEED IS INVOLVED

This argument for participation differs from the others in that the advantage is not seen as being a consequence of the participatory effort, but in a better selection of project sites. Communities demonstrate their need for the project and their willingness to support and use it once completed, by making the collective effort to organise and participate in construction, or by making a financial contribution.

A number of water agencies, for instance, like that of Lesotho, make it a condition before including a village on their programmes of construction of supplies (itself done with self-help labour) that the village should have deposited a financial contribution in advance. The collection of the contributions from individual households is a major effort for a village to organise, and it is apparently felt that to have made the effort demonstrates a strong communal commitment. Other agencies take the view that in their countries an application from a community, perhaps in writing, or made by a formal delegation, made with a promise of a community contribution, represents commitment enough.

Where communities in effect compete for limited government resources by demonstrating their readiness to make a contribution, a number of anomalies can arise. The more backward communities and regions are likely to be left even further behind, since those which are already better off and closer to centres of power will be able to organise more effectively. There is a danger that in the competition, too many villages will go ahead with collecting money or actually constructing buildings for services which the government is in no position to provide on such a large scale for several years at least (this happened in the Lesotho example); or (the case of secondary schools in Kenya) which it may never be reasonable to locate in so many small places. There is not even a guarantee that the projects are really wanted by a majority of the population, since when competition for resources comes to be a matter of the number of self-help projects begun, local politicians and dominant groups may exert considerable pressure on the population to take part. The poor may be induced to contribute to the building of, say, a secondary school to which access is theoretically open to all but which, in practice, caters primarily for the children of the better off (Lamb, 1974; Grondín, 1978, 226).

In general, it might be considered that if a community agrees to make a contribution to a project in collaboration with an external agency, and if the agency is satisfied that all sections of the community support this community decision, that is sufficient to establish that a felt need is involved. In other words, it is not necessary for the initiative to come from the community or for a prior contribution to be collected. The above discussion assumes the situation of the water agency using participatory methods, or contemplating their use.
It could, on the other hand, be argued that an even stronger felt need is proved where community action is undertaken without any great external agency input. However, many needed projects in many communities, particularly poorer ones, do require outside help.

7. PARTICIPATION ENSURES THINGS ARE DONE THE RIGHT WAY

If the users take an active part in the planning and design of the systems they will use, then these systems will presumably be better adapted to their needs than if the technical solutions are decided by outsiders without consultation. Some observers, however, make a distinction between major technical alternatives and such questions as location (e.g. of standpipes) or the detailed design of the components of most direct interest to the user. The distinction may be useful, but there could be a danger that it will lead to the assumption that the population can have no view on the more basic design issues, whereas these may be fundamental to meeting their needs: an example is that it is essential to take pastoralists' knowledge into account in siting water-points in semi-arid pastoral areas, but they are often disregarded by more educated members of other ethnic groups (Parkipuny, 1975).

It may be that the exercise of an open-minded and imaginative approach by the professionals or experts involved is as important as the participation of the users, and is in fact a necessary complement if user involvement is to lead to improved design in most circumstances, since many users will simply assume that the experts know best and will not raise alternative possibilities themselves.

There is one potential problem which may be mentioned here: when given the opportunity to choose between different technical solutions, there is a tendency for people to choose the solution which is more "modern", sophisticated, or expensive, for reasons connected with prestige. This is particularly true if they will not bear very much of the additional cost of a more expensive solution, or if the cheaper one requires more work which they will have to do without payment. For instance: in Ghana, where communal village latrines are common, villagers often state a preference for the

type emptied by vacuum truck over the deep trench pit latrine. The latter has to be replaced by village labour when it is full, whereas the vacuum truck operates at the expense of local government, an expense which is not charged to the particular village. Yet the pit latrine may be regarded as more appropriate to rural Ghana than the vacuum truck, which is subject to frequent breakdowns (IDS Health Group, 1978, Vol. 1: 218).

Therefore, it is clear that consultation on technical options must be approached carefully. Villages cannot be asked to plan something they do not know about, nor of course to take over the technical design which is the legitimate responsibility of the engineer.

But they can have a useful part to play in the discussion where there is a choice to be made between alternative solutions either in terms of major decisions over types of system to be adopted, or more minor questions of the design of user facilities - and useful suggestions for design improvements may energe from open discussion. Openness is also required over the costs of different solutions and who will bear them.

8. USE OF INDIGENOUS KNOWLEDGE AND EXPERTISE

Recent years have seen a fundamental change in the attitudes of professionals in many fields toward the value of the knowledge and skills possessed by indigenous practitioners in their fields. It is now generally accepted that indigenous practices are usually very well adapted to the circumstances in which they developed. One of the arguments for participation is that it enables progressive change to take place while making use of this knowledge and adapting it to new circumstances, rather than discarding it and devaluing its possessors.

There are two aspects: close attention can be given to local expertise during the process of consultation in the planning

and design stage; and indigenous techniques and experts can be used in the implementation of projects. Examples of the latter include the use of the indigenous medical traditions in China, or (on a completely different scale of course) of indigenous building methods in the water storage projects conducted by Guggenheim among the Dogon in Mali (Guggenheim and Fanale, 1979). This approach involves strong respect for and understanding of the indigenous technology, but a dynamic view which does not see it as a cultural heritage to be preserved separately and kept pure, but rather as a useful expertise to be improved upon by combination with elements of "Western" technology.

In many cases, of course, an introduced technology will be indisputably better in all respects; but sometimes indigenous techniques have advantages even when they appear less efficient or more costly: they use local labour and raw materials rather than imports; maintenance and repair will be easier for local craftsmen, and there will be less demand for scarce skilled manpower or spare parts; or the indigenous technique serves some additional purpose neglected in a superficial comparison. In the field of agricultural extension, there are many cases where farmers have been induced to adopt new practices which were not to their advantage (Dias, 1977: 70-2; Atsu, 1974 esp. 52-72). A similar thing can happen also in the field of nutrition education (Gordon, 1976).

It may be that the successful advocacy of latrines has, in some cases, had a similarly negative result: "The availability of simple privies, as we noted in several countries, did not add anything to the solution of the problem. Because many of these were unsanitary they proved, in fact, to have a statistically significant adverse effect."
(WHO, 1966, quoted by Saunders and Warford, 1976, 212).

In making use of indigenous expertise there is a problem, for the water agency using participatory methods, that it has to operate on a large scale and cannot easily plan for making use of local techniques and expertise of which it many have no knowledge. It is no accident that, for instance, Guggenheim's water storage projects took place in a few villages only. In some cases, it may be possible for an imaginative approach to indigenous techniques to be adopted by a water agency but this argument for participation generally applies more strongly to situations of "community action", whether externally-stimulated or autonomous.

9. FREEDOM FROM DEPENDENCE ON PROFESSIONALS

Largely because professional skills are scarce and can be sold in an international market place where fees are dependent on the rates of pay in rich countries, and, some would say, because the scarcity of these skills is institutionally maintained through insistence on unnecessarily long and expensive periods of professional education not geared to urgent local needs, professionals in most developing countries enjoy a standard of living incomparably higher than that of the mass of the population. In this context, a radical approach to community participation envisages the prospect of freeing the mass of the population from dependence on a virtual monopoly of expertise controlled by professionals. In the health field, for instance, in this view, collective self-care can replace the need for paying comparatively huge sums for treatment by a doctor (Warner, 1977, 11).

In this extreme form, the view may be said to be born of despair of the political system ensuring a fairer distribution of income or access to adequate services. One school of thought (Illich, 1975) contends that even state provision of services to all is an undesirable solution, since the services are still provided by professionals, people are subjected to their

control, their monopoly is preserved. Instead, people should be equipped for autonomously fulfilling their own needs, as individuals and small communities. It is difficult to imagine the socio-political structure of a society which met this condition.

However, a less extreme view sees scope for moving in the direction of disseminating more widely the knowledge and skills which have been the preserve of narrow professional elites, as in the case of the Chinese barefoot doctors. In the field of water supply, the suggestion is that a participatory programme can teach mechanical and other skills, and that every effort should be made to make this teaching as generally useful as possible. A villager trained in operation and maintenance might be enabled to open a mechanical workshop. Such training can also end a monopoly by one local craftsman (Westman and Hedkvist, 1972, 7).

10. CONSCIENTISATION

Participation in efforts to bring about communal improvements should, even (or especially) if the efforts are frustrated, help people better to understand the nature of the constraints which are hindering their escape from poverty. They may learn how to make more effective demands on government, or acquire a new resolve to change a situation of oppression in which they find themselves.

This is, of course, precisely the reason why some governments which represent entrenched interests are suspicious of efforts to arouse community participation. Government agencies may be prevented from using participatory methods, or alternatively the form of participation may be kept under strict control, defined narrowly in terms of the completion of projects and provision of services rather than in terms of increasing local organisational capacity, and de-emphasizing all elements which

might bring into question the distribution of benefits from particular projects or the distribution of wealth and power at local or national levels.

In other countries, government's interest in improving the position of weaker sections of the population is to varying degrees frustrated by local power structures. Two broad approaches to the problem are possible: close targeting of programmes to benefit weaker sections, implemented through the bureaucracy and with administrative controls to ensure that the benefits reach those for whom they are intended; and, on the other hand, the encouragement of organisation among the poor to claim their rights. This begins with "conscientisation", the development of consciousness among the weaker sections concerning the structural causes of their situation, or at least of their rights under existing laws. The two approaches are not in conflict and may be adopted together, but they seem to reflect different opinions or assessments of what is likely to be successful. In India, for instance, the two approaches are reflected respectively in the Integrated Rural Development programme with its strategy of "decentralised micro-level block planning for full employment", which carries planning down to the level of the individual family (Azad, 1978), and the National Adult Education Programme, whose objectives are explicit on the need for conscientisation. The differing opinions are reflected in different views of the role of local government institutions - in terms of their existing tendency to be "dominated by the rich and the strong" (India: Dantwala Committee, 1978, 12) or in terms of their potential to serve as organisations more representative of the weaker sections (India: Mehta Committee: see Bhattacharya and Sharma, 1979).

Where local government institutions are less well developed, the committee structures created by community participation programmes may take their place to some degree, as they may also in the villages too small to have their own local government councils.

Then, the same question often poses itself: are they necessarily dominated by the rich and the strong, perhaps even preventing benefits from reaching the weaker sections - or do they have the potential of strengthening the hand of the poor?

III. CONSULTATION

This chapter is primarily addressed to the situation of water agencies using participatory methods within a conventional project planning approach in which a limited number of communities are selected by the agency for a water or sanitation project. We shall return to community action in Chapter V.

Consultation with the community is both an element of participation in itself and an essential preliminary to any further forms of participation.
In the former role, its purpose may be described as ensuring that the project meets the community's needs as far as possible, by bringing together the community's and the outside specialist's conceptions of those needs, so that each understands the other's viewpoint and the dialogue results in a harmonisation of approach. In the latter role, consultation is a matter of planning other activities, in which there will be community inputs, and it may be expected to involve a degree of negotiation. It may also involve a need for discussion of arrangements to ensure equity within the community in the distribution of the costs and benefits of the projects.

THE RELATION OF INFORMATION-GATHERING TO CONSULTATION

Before discussing the topics on which consultation must take place with the community, we should perhaps refer to the question of gathering information about the community. It is sometimes said that in order to plan effectively a programme of community participation, a considerable amount of information must be gathered by the agency about the community. On the other hand, proposals for community participation have been criticised on the ground that they require an inordinate amount of preparation in the form of studies of communities, especially of their social structure and culture (Feachem, 1979).

It can be argued that one of the main reasons for community participation, and the main virtue of consultation as such is that the community members are familiar with their own situation and can therefore ensure through their influence on the project that at least crude mistakes are not made in its adaptation to their circumstances.
Consultation with the community is, to an important extent, an alternative to information-gathering about that community. But to what extent? What kinds of information may still be necessary?

First, there is the information about a community which it may be useful to possess before any approach is made to that community, in order to ensure that the approach is made in an appropriate way (e.g. that one faction is not rendered hostile because the approach is made through its political enemies), and the agency is alerted in good time to particular problems which might be met (e.g. an important landowner who might be inclined to oppose the project because he currently has a well and allows others to draw water from it, thereby acquiring or reinforcing his influence over a section of the population)*. This kind of information may be available from a person outside the community who knows it well and is familiar with the issues involved, and who might be a local authority official or a priest.
Water agency personnel at district level should be sufficiently familiar with their area to know what kind of informal enquiries it may be useful to make before starting work in a new community, in order to find out about such questions.

* The two examples mentioned here are hypothetical, but were suggested on the basis of fieldwork in the Pakistani Punjab by Akmal Hussain (personal communication).

The formal political and administrative relationships between communities and higher levels of authority differ greatly from country to country, and within a country often differ greatly as between small and large, as well as between rural and urban communities. Where a community has either an elected council or a traditional council of undisputed authority, it will be taken for granted that the approach to the community will be through this body. Where, on the other hand, a community forms part of a larger administrative area and has no council of its own, it may be necessary to find out more details of the community's informal power structure before an approach is made.

Second, there is the information which may be required to confirm that the community conforms to the selection criteria set by the agency, or to determine whether special subsidies are justified.

Objective data are needed on such matters as population, the quality of existing water sources and their distance from dwellings, and perhaps on approximate income levels among the population (not just a community average, but an estimate of the range or distribution). In some countries, information on these matters will be available from official sources. In some other countries, it may reasonably be concluded that the level of accuracy required to make judgements on selection or on subsidies would not justify the expenditure of resources on special studies, and that the information available, even if relatively scant, will suffice. However, it is possible in a well-organized national programme of rural water supply to carry out a special study of each community prior to final selection: in Colombia, such a study is carried out regularly as the first stage of the community participation programme in any community, and is the responsibility of the promotors belonging to the water agency's Community Promotion Section. The community study covers social, economic, and sanitary aspects, including the interest of the population for communal action, the human and material resources it can make available,

and, in order to determine the total contribution to be made by the community both initially and in subsequent instalments, the users' ability to pay. (Mora Ramírez and López Orozco, 1976, 92-3; Mora Ramírez and Salazar Duque, 1979, 124-5).

Third, there is the information required by the agency during the consultation on planning and design of the project. Most of this can probably in most cases be provided by the community during the process of consultation; but it will need to be supplemented with information gathered by staff in informal contact with community members. In this way, doubtful or delicate questions such as the willingness of the population to participate in voluntary labour, or the impact of the project on poorer groups or those who may not have a voice in community councils, can be explored.

It seems hardly necessary, in an operational project as opposed to one which is research-oriented or experimental, that this stage of information-gathering should involve any extensive written material on the general economy, social structure, cultural values or behaviour, or interpersonal relations of the community. To seek such material may not only be unrealistic in terms of the staff resources of an implementing agency, but may also be said to reflect a non-participatory view of planning, even when accompanied by the recommendation that the community should be involved in gathering the information: it is a view which envisages the gathering of information about the community for planning decisions to be made by the agency. In practice, the local staff who will implement the projects in the communities will, if they are of the same ethnic group and similar social stratum as the members of the community, generally be familiar with most aspects of the culture, and will be able quickly to appreciate the essential features of the social structure of that community.

They should be able to avoid gross errors of design through failing to take account of these features, although they will not have been trained to present a social scientific report on the subject.
This experientially acquired appreciation or knowledge of local culture may often be of more practical use than the description which may be contained in a report: it is more likely to be an effective guide to the field workers as they undertake the task of consulting with the community and encouraging its participation.

It cannot, of course, be guaranteed that the agency's local staff will have the necessary orientation to do this, or that they will share enough of the cultural understandings of the population: the "cultural gap" may be a serious problem, leading to situations where staff think that they have received valid answers to questions they have asked, but where the questions have not been understood as intended. "Some development officers operate at different conceptual levels from those of the villagers; these development agents, being strangers to the area, have little legitimacy in the eyes of the local people. Others make visits more for the purpose of inspection and inventory-taking than of working with the residents." (WHO 1977, Annex III, referring to an Indonesian case). Clearly, what is then required is nothing short of the re-education of the staff concerned.

In the published reports on social aspects of water supply or sanitation projects, a number of cases can be found where success or failure has been seen to depend on whether certain specific types of information about the community were known or taken into account. A long list of points for investigation could be drawn up on the basis of these reports. However, there is no guarantee that a new project will not present different problems. The greatest need appears to be for an open approach to be adopted to dialogue with the community. This also means

creating an atmosphere during consultation, in which community members feel no constraints against mentioning problems different from those which have been raised by agency personnel, including problems concerning which some reticence may be expected. For instance, Dube is reported as saying of a well in an Indian village that "a protective parapet changed the women's posture, thus making water collection more exhausting in their view and causing long waiting times (van Wijk-Sijbesma, 1979, 47). This problem might have been circumvented if a specific item on parapets and posture had been included in a checklist for investigation, but it is questionable if checklists could include all relevant points without becoming excessively long. The alternative is to ensure that the women as users are brought actively into the discussion of the practical aspects of design which will affect them, in an informal atmosphere in which they can bring up points of difficulty.

CONSULTATION: PURPOSE AND SCOPE

Consultation means involving the community to some degree in decision-making concerning the project which is proposed. If a water supply and sanitation project is to achieve its objectives, at least those in the area of health, the facilities must be used: optimal use can be assured by prior consultation with users concerning their needs, and by devising - in dialogue between technical experts and local population - a scheme which meets the needs as well as possible. This is one aspect of consultation. Another is, in effect, negotiation over who will make what contribution to the project both at the time of its construction and subsequently in terms of water rates, loan repayment, or operation and maintenance activities.

Consultation to meet the users' needs is the most essential and indispensable form of community participation, which should be present in all water and sanitation projects. The dialogue

which is established should be such as to enable the villagers to appreciate more fully the nature of their needs for water and sanitation, and the relation between their own behaviour and their health - it is not just a question of their informing the water agency of what they see as their needs. Still less should it be, as it is often seen, a matter of the agency acquiring information on how sophisticated or educated community members are in terms of "modern" health knowledge. The dialogue should be such as to give the water agency personnel a fuller and more sympathetic understanding of the circumstances of the community. It should, in other words, achieve a certain depth of mutual understanding as a dynamic learning process for all those involved, rather than a simple exchange of information and suggestions.

At the same time, the dialogue between the agency and the community will inevitably have an element of negotiation, and it should not be forgotten in the rhetoric of cooperation that communities will generally be interested in obtaining the maximum contribution or subsidy from the agency. This may well be the main factor influencing the community's preference for one technical solution over another, or the way in which the community's own ability to organise and make a contribution is presented in the dialogue. The agency may well need, after reaching as full as possible an understanding of the circumstances of a community, to insist on what it sees as a more appropriate solution requiring, perhaps, more community effort; or a certain level of community contribution. In a large-scale programme, norms will be established for the levels of community contribution, and this will make the negotiation in any particular community more straightforward.
However, in a large-scale programme as opposed to a project approach, there is a danger of losing all flexibility, so that the unique social characteristics and potentialities of individual communities cannot be expressed in their own programmes of reducing them to 'the implementation of plans

already made and targets set vertically'. Each water agency will have to balance its need for a degree of uniformity in a large-scale programme with the community's need to have a real voice in decision-making. In practice, it may be suggested that this balance can be achieved by an agency which allows for considerable flexibility while it builds up experience of the range of types of community, and community response in terms of participation, which it encounters. A small number of types of community water project can then be developed for application in different types of community, and this degree of uniformity should be sufficient for planning purposes and to ensure an equitable spread of the agency's resources among communities. (The case for a fully flexible "user choice-oriented" approach is made in Whyte & Burton 1977; the argument that "flexibility at the regional, district or branch level may well be practicable, but to regard each scheme as a fresh planning exercise would strain even the most efficient bureaucracies" is made by Feachem 1979).

ADMINISTRATIVE ARRANGEMENTS

One of the problems of introducing the practice of consultation to meet users' needs, in areas where it has not previously been customary, is that the attitude frequently held by agency staff is that the population should accept and adapt itself to what is provided: there is little empathy even in respect of practical difficulties they may have, quite apart from any more "exotic" differences in customs and culture (Curtis, 1978).

This is part of a wider problem which must be mentioned and brought into open discussion: while at the higher levels of policy-making there is increasing appreciation of the intellectual abilities to be found among poor and rural populations with low levels of formal education, the attitudes prevalent among other levels of administrators and technicians remain in many if not most cases extremely disdainful. Lack of knowledge, or lack of formal education, is equated with lack of intel-

ligence. Community participation techniques require dialogue with community members in which their ideas are treated as valuable contributions, but these dialogues are to be carried out by lower-level staff, whose own social position may well lead them to emphasise the superiority of their technical training. Perhaps retraining of lower level staff can overcome the problem to come degree, but often there is a further problem in ensuring that the retraining itself is carried out by staff whose attitudes are favourable to participation. The solution may lie in developing a special cadre of promotion or community development staff within a technical agency.

In order to carry out consultations with the community, a water/ sanitation agency has the option of employing a specialised corps of extension agents, trained in the techniques of community development, or simply expecting the technical staff in charge of projects in each area to undertake the dialogue with the communities themselves. The advantage of training a special corps of extension agents is that a body of expertise on community participation techniques can be built up within the agency. This may not be so necessary in a country where popular mobilisation and participation are widespread and normal and where, therefore, all administrative personnel are used to the requirements of the approach; but it is more frequent that technical staff have little preparation and perhaps little patience for it. In Colombia, where a corps of extension agents - promotors - is employed by the Basic Rural Sanitation Division of the National Institute of Health, responsible for rural water supply, it is organised as a section with its own headquarters staff and training programme, handling health education tasks as well as liaison with the community throughout the process of consultation and self-help construction; the extension agent is appointed together with two community representatives to sit on a three-man management board for each water supply.

REPRESENTATIVE BODIES IN THE COMMUNITY

This introduces the next question which must be decided, that of the body within the community which will be the focus of consultations and the organisation of any community action. In different countries many different types of councils or committees exist in rural (fewer in urban fringe) areas, highly varied in the extent of their powers and responsibilities. They include local authorities, often responsible for water and sanitation where these are not provided by a national agency; development committees, based on harnessing the efforts of the people for improvements and especially communal facilities and infrastructure - often including environmental sanitation and small water supplies such as wells; and "traditional" institutions of authority and representation, such as chiefs/headmen or councils of elders, which may constitute the greatest real locus of power at local level; finally, in many countries the local committees of ruling parties exercise the authority derived from their links with national centres of power. Locally, yet other types of organisation may be relevant to the provision of water supplies or sanitation: the corporate communities of Peru or agricultural producers' cooperatives elsewhere; or the health committees which are set up under plans to provide primary health care; or, instead of development committees, self-help efforts may be channelled through voluntary groups, as in Kenya. Women's societies or groups, or even traditional women's organisations, may be particularly concerned with water.

Local authorities. While some consultations normally will take place with local authorities as a matter of course in the introduction of a new water supply or other facility, in many countries the local authority works at a level considerably removed from that of the ordinary villager (or poor urban resident), and consultation with the local authority cannot realistically be regarded as consultation with the community.

This is particularly true when the lowest tier of local authority covers an area comprising a large number of real (separate nucleated) communities. On the other hand, it may be the only level of elected local representation and due weight must be given to this.

In a few countries (e.g. India) recent reorganisations of local government have restored authority to bodies at village level; (though even in India, the "village" panchayat often covers an area including two or more real villages).
Elsewhere villages and small towns have often lost the degree of autonomy they may have possessed in earlier times.

In the relatively infrequent case where the local authority area covers only the community where the water or sanitation project is to be located, this council can be taken as the main focus for consultation and community participation. Indeed the formation of a separate committee outside this structure would very likely cause problems: council members would consider themselves bypassed as legitimate representatives. In this case, one remaining problem might be lack of cooperation on the part of factions opposed to those in office at local authority level; it may be possible for an extension agent to overcome this problem by conferring with all parties and trying to ensure that the project is not identified with one faction but that all can take some credit for it.

A sub-committee may be appointed to deal with the details of the proposed project. This presents an opportunity for cooption of sections of the community not represented directly on the main council, not only other factions but also women and young people who may be less inhibited by considerations of dignity in discussing the practicalities of hygiene and sanitation.

In the more common case of local authorities covering larger areas, there may well be a need for coordination with the water agency in the provision of services; but from the perspective of the village in general this local authority is external, so this coordination is not a matter of community participation.

Development committees. Where they exist and cover an area which coincides with that of the projected water supply or sanitary improvement, a development committee is the obvious community focus for the project; indeed, a committee started for the water/ sanitation project may subsequently take on other functions. Development committees are often founded with broad aims including that of raising agricultural or other economic production, but it is precisely in the area of communal services, like water and sanitation, that they are often found to have their greatest potential.

In some countries, such as Sri Lanka with its "Rural Development Societies" and Ghana with its "Town Development Committees", these committees have been set up in all communities as a matter of government policy, and are supported with Rural Development Training Centres or the like. In other countries, committees have been formed spontaneously and exist in some communities but not in others. There are cases, such as the Local Development Associations of the Yemen Arab Republic (Lewis, 1980), where they are able to raise substantial funds locally, but more often they appeal to government for financial help for substantial infrastructural projects. The importance attached by government to financial help for this type of community action (as opposed to a response in terms of projects controlled by a government agency, or no response at all) may be a measure of government commitment to community participation.

However, development committees are not without their internal problems. They are not insulated from the dissensions of local

politics. It cannot necessarily be assumed that they represent the views of the whole community.

"Traditional" bodies. In some countries (e.g. in West Africa) the traditional institutions - chiefs, councils of elders - retain considerable authority: it may be normally expected that any approach to a community wil be made through them, and in fact it may be difficult for outsiders to penetrate beyond the appearance of full harmony and unanimity presented by the community's formal spokesmen. Yet, again, there may be undercurrents of dissent within the community.

In other places the position of chief or headman has lost the legitimacy of authority it once held, sometimes because chiefs were *imposed* as agents of colonial government in a system of indirect rule, sometimes because more democratic systems of representation have been instituted. In some cases, headmen are still the agents of government.

Thus it is extremely difficult to make any generalisation concerning the appropriateness of using traditional systems of authority as the focus for community participation: the relationship between government and traditional authorities in each country where there is any relationship, is unique.

It can, perhaps, be said, however, that in smaller homogeneous communities the traditional chiefs/headmen are generally more likely to be people who mix freely with the rest of the population (rather than being separated by formality and rules of respect), and have a similar standard of living: there can in these circumstances be more confidence that they represent the views of the people in general. In the more homogeneous villages where traditional councils survive, it may be particularly useful to begin the discussion of water or sanitation projects with these bodies. There are countries where such councils continue to function, and to have influence, despite the lack of any official recognition.

Whichever body is approached in the first instance - and this may be particularly clear in the case of traditional authorities -there will often be the need to establish a second committee or informal group to discuss details. Formed under the aegis of the more senior body in order not to appear to compete with it, such a group should perhaps ideally include representatives of each of the social groups in the community (e.g. both sexes and various age groups as well as any other social divisions); persons with relevant knowledge, whether modern or indigenous (e.g. a school teacher, a plumber or mechanic; a well-digger); and a preponderance of active younger people. A school teacher may well take a leading part.

Such a ideal committee with enthusiastic and articulate members will not always be possible to achieve, of course, but the more representative and the more active such a committee is, the less difficulty there will be in ensuring that the needs of all sections of the community are met. Where it is not possible to gather a representative group of this sort, it will be more necessary for the extension agent to sound out views and opinions in various sections of the community through informal conversations.

TOPICS FOR CONSULTATION

Water needs and water use; water and sanitation as a system.
Water supplies often fail to achieve their intended purpose of improvement in health, or even fail to be used at all, because there has been a poor understanding between the agency responsible for installation and the community concerning the precise needs which the supply should be designed to meet. Often the main potential of consultation is to achieve a better understanding in this respect.

It sometimes appears that the view prevalent among technical staff is that their job is limited to the provision of water

meeting certain specifications in terms of quality, and if people do not use it that is none of their concern. Education may be seen as required, but not as their responsibility.

Responding against this attitude, one author states in the context of Tanzania: "If people do continue to use old sources there are good reasons for it. Either the new supply is inadequate, resulting in queueing at water points, or the quality of the water is perceived as inferior to that of the old sources (usually in terms of taste or colour)." (Bantje, 1978, 3) The problem is that while these reasons for not accepting the new supply are "good" in the sense that they are rational in terms of the people's existing knowledge, they may nevertheless be based on incorrect assumptions - especially where people use the colour of the water as an indication of its pollution. Thus, even though it is clear that people understand the value of a good water source, there is still a difficulty which cannot be solved by adopting their criteria and attempting to supply water which meets their standards of taste and appearance. There is more to the question than that, and there must be a dialogue between experts and the community over their real requirements.

The simple division into domestic water and water for farming purposes is often quite inadequate in rural communities of the developing countries: the local population has needed to distinguish various "types" of water, according to availability and the requirements of different specific uses. A new supply will generally fit into this pattern, offering one new alternative available source, rather than straightforwardly replacing all existing sources of domestic water. Polluted water from old sources may still be drunk, unless consultation with the community leads to a change in practices.
The only case where this might not be necessary is where the new supply is available in adequate quantities for all domestic needs at all seasons and times of day, at a location which is

more convenient than any of the older sources for all families, and where it meets the community members' existing criteria for drinking water in terms of taste and appearance. Such conditions are clearly more likely to apply for urban supplies or where house connections are provided, though even here old sources may be preferred for drinking for reasons of taste.

One of the most interesting and detailed discussions of how a local population distinguishes "types" of water, for which different characteristics are demanded, is given in a recent report on water in some rural communities of Guinea-Bissau (v.d. Ploeg, 1979, 20). He finds, for instance, at the village of Buba, that four types of domestic water are distinguished: for drinking, for cooking, for washing clothes, and for bathing. Water for drinking must be "clean and tasty". "Clean" water is water without visible contamination, but "an important point is also whether the water is flowing or not; there is much criticism of 'stagnant' water from a well. But this objection disappears when the well is fully covered." As far as taste is concerned, van der Ploeg finds that it is the quantity of salt which is most important: even small quantities (less than 200 mg/l NaCl) are objectionable; water containing iron is also rejected. Water for cooking must simply be near the house; for washing clothes, it should be flowing, abundant, and at a meeting point; for bathing, it should be at a site protected from view. In this community, an existing tap connected to a deep well is not used at all "because of the reddish colour which the water sometimes has, and its taste of iron."

Water from other wells is used largely for cooking, while the water which is preferred for drinking, as most tasty, is that collected at a river bank where numerous other activities take place and, in objective terms of risk to health, the water is most likely to be polluted.

CHECKLIST NO. 1

Sample Checklist of Uses for Water and Relevant Requirements

Use of Water (Not exhaustive)	Objective requirements for health (minimal)	Requirements for Convenience (Community Preference, etc.)
1. Drinking by babies, sick people	Assured purity (boiling may be specified)	Practical/customary constraints: is water boiled or only heated?
2. Drinking by healthy children and adults	Purity	Taste: will boiled or deep well water be rejected?
3. Rinsing mouth, cleaning teeth	Purity (perhaps less stringent)	Is there a custom of using surface water which is suspect?
4. Food preparation – uncooked food	As above	Is there a custom of using surface water which is suspect?
5. Dishwashing	As above	Preference for running water?
6. Cooking		Taste; colour and clarity
7. Personal hygiene (washing body without immersion)	Abudance. Use with soap or heated	
8. Bathing, swimming (immersion)	No schistosome organisms (cercadiae)	Seclusion? (for women)
9. Washing clothes	As above	Softness (economy of soap)? Preference for running water? For sociability?
10. Watering of domestic animals		Requirements of each type of animal; dispersion of sources to avoid overgrazing
11. Vegetable gardens	Sullage acceptable but sewage only after some treatment	Space near houses? Damage by pigs or other animals
12. Irrigation of [illegible] food crops	Care to avoid [illegible] sewage only after treatment	Equitable sharing of water as major resource
13. Other irrigation or fish culture (incl. irrigation of pasture, tree crops, non-food crops)	Care if sewage is used [illegible] fish or [illegible] [illegible] protection against parasites while working in water	

This checklist is only a sample. It will need to be modified in local circumstances. In the third column, many more concerns will certainly be apparent in each community. The suggested requirements for health are not to be taken as authoritative but only as a sample list of concerns.

One way of approaching consultation on the uses of water and on the requirements to be met for different uses (according to the community members and according to the health-related criteria of the water authority) would be through the discusssion with the community of a checklist of possible uses of water. Such a list is given (Checklist No. 1), together with some examples of requirements which may, according to circumstances, be judged to apply. Each of the uses to which water is put in the community can then be discussed separately in relation to existing water sources and practices, and in terms of the desirable features of a new supply, including additional facilities for bathing, washing clothes, etc.

The checklist extends to non-domestic uses of water such as irrigation. In practice, a view of the entire range of a community's water needs is likely to be the best basis for an efficient plan to meet the various needs; and even if the concern can only be with domestic water in the present instance, community members may wish to use some of the water for other purposes also. Wherever possible, sufficient water should be provided to meet all needs. However, if water is provided for economic purposes, the agency must ensure that economic charges are made especially in the case of those using large quantities, and that the needs of poorer (and less powerful) people for domestic water are given priority. If attention is not paid to these questions, there may be a risk of diversion of water in an uncontrolled way for economic purposes; such problems have been encountered in Eastern Africa in connection with the watering of livestock.

Similarly, water and waste should be considered as a system, with attention to both the health implications and the possible economic benefits of the use of waste water from household use and in particular of night soil. (Pacey, ed., 1978, esp. 186-223).

The result of the consultation with the community on the various uses of water will be a much clearer idea, shared by the community and the agency, both of the facilities which are desirable and of changes in customary practices which may also be needed for improved health. The facilities may include: improvement of existing sources as well as (or instead of) construction of a new supply; clothes washing facilities or bathhouses; separate water points for animals, away from domestic water standposts and perhaps dispersed; provision for waste water drainage or re-use. It may be possible to plan jointly the provision of domestic water with that of water for livestock or irrigation. It is in these senses, rather than in more technical ways, that the community can contribute to the planning and design of the water system, though a technical contribution may also be made.

It is true that in some circumstances such detailed consultation on the uses of water may not be necessary for planning, particularly where house connections are envisaged and no difficulty is expected with acceptance due to taste or colour.
However, it may still be a useful exercise both in terms of establishing the feeling of being involved, and as a background to health education efforts.

In the area of sanitation, special attention needs to be given to the local people's attitudes to the fertiliser value of night soil. It cannot be taken for granted that there is popular resistance against its use, and indeed the production of a valuable fertiliser may be considered as a possible incentive for the installation of latrines - of the composting type, of course.

Details of system design. It is likely that the system will best meet the needs of its users if each of the aspects of design which affects the users is discussed extensively with them. Of course, experience gained in similar communities will also be a valuable guide, but the two should probably best be regarded as complementary: the most effective way to design a system to meet local needs may be to visit a number of comparable communities where water systems have already been introduced, making a brief informal study of difficulties in relation to the features which it is intended to include in new systems, and then to discuss these difficulties with the communities where the new systems are to be constructed. Though agency personnel will have considerable local experience, it may not have been focused on the difficulties faced by communities with existing systems.

Problems may arise in such areas as: water capacity (e.g. low pressure, leading to queueing), breakdown due to unsuitable equipment - beside these major problems most others fall into relative insignificance - problems of siting, handpumps which require too much strength or are inconveniently placed (e.g. for children or even for women), etc.

There are generally even greater problems with the design of sanitary facilities, and the need for consultation is correspondingly greater if it is decided to construct them or to facilitate their construction by individual families. The effort may be wasted unless a high proportion of the population use the facilities, including particularly children. Children may be reluctant to use adult latrines, which may be constructed above dangerous pits or may just be too large, while children are also most likely to defecate within the inhabited village area rather than at a secluded place outside it. Thus, consultation may include the discussion of an appropriate design for children's as well as adults's latrines, and of appropriate methods of disposal of excreta of children too young to use latrines at all.

Financial aspects and the fixing of responsibilities.

At the earliest possible stage, it is important that the agency should make clear to the community the extent of its own commitment, leaving no doubt about the costs which will fall upon the community and/or its members as payers of water rates. Community participation in planning implies that if the community or its members are to be required to make any substantial financial contribution, they should be presented with alternative possible systems, and enabled to choose one which does not impose too big a burden in the community's eyes. On the other hand, subsidies may be made available to ensure that a system can be chosen which is adequate from the health standpoint.

It is sometimes stated that 5 per cent of the average cash income in a community is an acceptable figure for a family to be required to pay for water. One authoritative recent source even names a higher figure: "(by convention) only 5 or at most 10 per cent of cash income can be regarded as available for domestic water." (Cairncross et al., 1980, 155.) The World Bank sector policy paper on Village Water Supply quotes Inter-American Development Bank experience that "Water charges, set at about 3 per cent to 5 per cent of the income of the head of the family, cover at least operating and maintenance costs and possibly also some depreciation. Very rarely can families pay more than 5 per cent of their income for water charges." (World Bank, 1976, 41; see also Saunders and Warford, 1976, 184-190). The World Bank position was that even "basic systems", with supply through public standposts, should have their operating and maintenance costs, at least, paid by the village. This is contrary to the practice in countries such as Tanzania and Zambia, where drinking water is regarded as a basic human right, and standpost supplies are free.

Water rates of the order of 5 per cent represent considerably higher a proportion of the poorer rural population's income than is usually paid by urban consumers with house connections

in developing or in advanced countries. With such charges, there is a danger that income will be diverted away from other basic necessities, food in particular or perhaps soap, in such a way that the net effects on health are negative rather than positive. A further problem is that there is always a range of incomes between individual families, so that if charges are set at 5 per cent of median income, this will represent a much higher percentage of the income of the least well off. (If the mean is used instead of the median, the problem will usually be greater still, because incomes are usually distributed in a skewed manner, with most households falling below the mean.)

This explains why there is so often apathy among poorer sections of the population for communal improvements: they involve a cost as well as a benefit, and the cost represents an unacceptably high proportion of their income. (It may also be that the benefits appeal to them less, whether it is a question of a secondary school which few of their children will stay at school long enough to reach, or an ornamental improvement which is of no consequence to them.)

It is not usually possible to graduate water charges in such a way that the poor pay less for the same service within a community. It is, however, often possible to provide private connections for those willing to pay their economic cost, while permitting the poorer families access to standpost supplies free of charge. It is generally found difficult to collect water rates for public standpost supplies, though this may be especially true of urban fringe as opposed to rural areas and experience varies regionally (there does not appear to have been any comparative study to explain this variation).

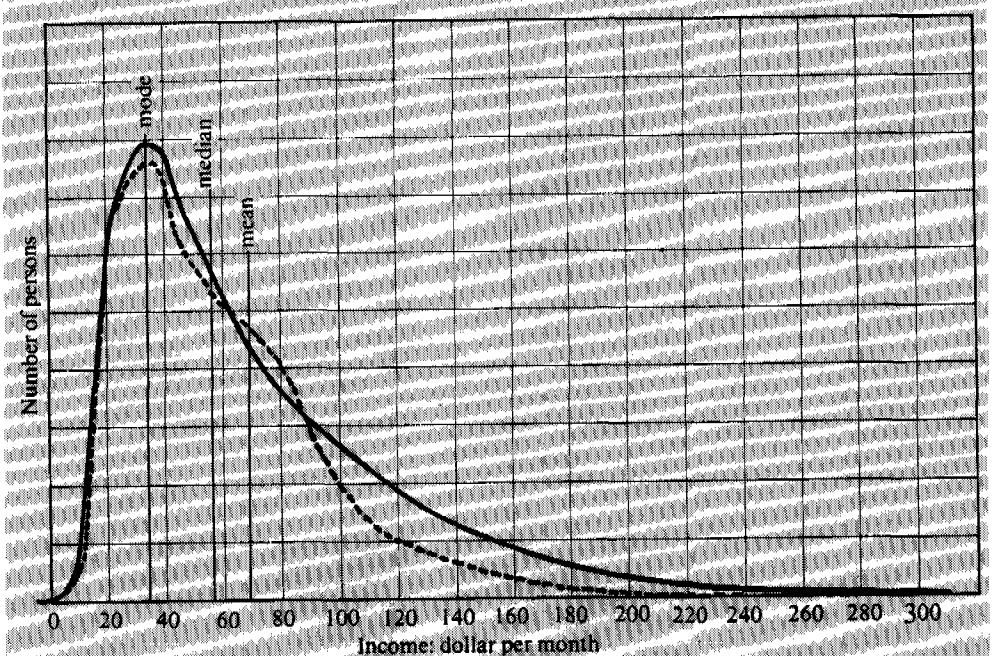
Carruthers and Browne list seven reasons in support of the view that there is a strong case for free water from communal points. Apart from the basic point that it is an efficient means of redistribution they include health considerations - people may not use a supply for which they have to pay. (Carruthers and Browne, 1977, 158-9.)

DIAGRAM 3

Distribution of income in a community

The lognormal curve (solid black line) represents a typical distribution of income in a community which is neither very egalitarian nor sharply divided into, say, landowners and landless labourers.

The dotted line represents, in dollars per month, the actual distribution of income among male manual workers only in a particular case, a survey in San Salvador, Central America, carried out by the author in 1967.



The mean, median, and mode refer to the lognormal curve. It can be seen that if, with such a distribution, the **mean** income is $ 70 per month, the mode or most typical income will be only $ 36. Thus, a water rate set at 5% of average (mean) monthly income ($ 3.50) will take nearly 10% of the income of the modal household. If set at 5% of the **median** of $ 58 (i.e. at $ 2.90), it will still take 8% of the income of the modal household.

It is clear, then, that the consultation with the community over financial aspects must be particularly carefully conducted in order to ensure that the poorer members of the community are able to voice any dissatisfaction they may have with the financial arrangements proposed, and that the decisions reached reflect their interests too. In some Latin American national rural water supply systems, after a few years of operating public standposts in a community along with some house connections, when the number of house connections reaches 60 to 80 per cent, the public standpost facility is withdrawn. This obliges the remaining households to agree to a house connection (or rely on others for water, perhaps paying for it at a high rate), and seems therefore to operate against the interests of the poor. (Saunders and Warford, 1976, 125.). A similar problem has been observed in India also (Van Wijk-Sijbesma, personal communication).

One possibility which has been suggested in cases where it is necessary to charge for standpost supplies, is to provide standposts for specific small groups of households, making them collectively responsible for the payment. This method seems more likely to be successful where the population is relatively stable (few changes of residence), where contacts between neighbours are frequent, and in particular where households are geographically grouped, e.g. around courtyards.
In Calcutta, a system even of communal sanitary facilities for groups of households, usually much more difficult because of shared responsibility for maintenance, has been successful (Maitra 1978).

THE PROBLEM OF DISADVANTAGED GROUPS

As has already been remarked in several contexts, the need to ensure equity within the community in the costs and benefits of the water and sanitation scheme should be in the forefront of attention at the stage of planning and design in consultation

with the community. The problem is that a community's formal leaders, even when elected, often represent the interests of a dominant section.

One way in which it is often suggested that this problem can be met in community participation projects is for consultation to take place with the whole community, or all sections, and not just with existing authorities. In most circumstances, there appears to be every advantage in encouraging as open as possible a process of consultation. In smaller communities, this might well mean that all meetings are fully public, and an atmosphere is created in which any member of the community feels able to speak. However, this will be difficult in larger communities, and frequently women are excluded by convention from attending or from making their needs heard. It may also be difficult for poor people, dependent as individuals upon the goodwill of more powerful community members, to raise questions which challenge their interests.
Thus, open meetings do not always guarantee equity.

Another possible step has already been suggested: the formation of a new committee for the project, one which will include representatives of all sections and of women, and be limited to the development project and hence above political factionalism. The formation of a committee for the water project will probably in most cases be found to be essential wherever an appropriate one does not already exist, to organise any form of participation. However, there is still a possibility on the one hand that the committee will, like an open meeting, be dominated in practice by representatives of dominant sections, so that others feel unable to challenge their view. On the other hand, if a committee does challenge the views and hence the position of a dominant section, there is a danger of more open conflict or obstruction, perhaps leading to the failure of any participatory element in the project. For this reason, some argue in effect that outside agencies should simply work

through existing authorities and local political structures, rather than attempting to work with all sections. This is, for instance, the view taken by Oberg and Rios (see below, Chapter VIII, where we shall return to this very important question).

If, however, the political structure of the community reflects the dominance of one group, how are the interests of others to be protected?

Another type of solution to this problem is for the agency personnel to make themselves aware of the clashes of interest which may exist in connection with the project, and to endeavour through their own proposals in the course of consultation, to ensure that the interests of weaker sections are promoted, and equity preserved. This will involve knowing what problems of equity have arisen in other places, and being able to judge from the circumstances in any community whether these problems may be repeated in some form there. It may also involve tactful informal consultation with community members, especially members of the groups which may be disadvantaged.

A checklist of ways in which water supply projects can lead to the disadvantage of poorer groups is given (Checklist No. 2).

Water and sanitation projects may also affect the relative position of women as a generally disadvantaged group. The effect, normally, should be positive, with women having to spend less time and effort in carrying water*.

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* This is not always the case. In two Indian communities of Chichicastenango Department in Guatemala, "Because of their large capacity, traditional clay tinajas (jugs) were used to carry the water. The long distance to be traveled in darkness, the need to carry large volumes, and the use of heavier clay tinajas were all factors which required that men carry out the task most of the time ... With an abundant supply of water now located close to the homes ... light-weight plastic tinajas are being introduced by the people. In turn, this innovation has allowed the adaptation of the water-carrying task into the routine of the women and children." (Buckles, 1979, 74-5).

CHECKLIST NO. 2

Ways in Which Water Supply Projects Might Possibly Lead to a Worsening of the Relative Position of the Poor.

1. Dominant groups might get a subsidised service which the poor do not receive, e.g. individual supply to their homes.

2. Access to the new water supply might be restricted or monopolised. This danger includes cases where the design of the project appears to cover the poor too, but actual flow is limited or diverted, so that only the dominant group benefits, e.g. by use of water for farming purposes, in such quantities that the supply does not reach the homes of the poor.

3. Water used for agricultural or commercial purposes by dominant groups may increase their income in ways which are not available for the poor; this can then lead to changes which worsen not just the relative but also the absolute position of the poor – changes in land tenure, or others, such as the discontinuance of arrangements to share food in times of disaster.

4. Removal of an employment opportunity in water-carrying, well-digging or any other activity linked to the existing system, such as the manufacture of equipment used.

5. Equal contributions exacted from all inhabitants for the construction or running costs of the water supply may mean a charge which poor families are in no position to afford.

6. Voluntary work demanded at peak times in the agricultural work cycle may lead to substantial loss of production.

7. The power of dominant groups may be increased by patronage available, e.g. in the form of selection of a water supply operator on a salary. At the least, the village-level organisation of the programme, in collaboration with a powerful external agency, will be a political resource in terms of prestige.

(The above is a slightly amended version of the list originally given in White, 1978, 60, and reproduced in Assignment Children, 46/6, Spring, 1979).

It may be necessary, however, to ensure that this is indeed the result. It has been reported in one case from Southern Africa that a village meeting at which only men were present (except one woman to serve refreshments) raised objections to a water supply project precisely on the grounds that it would free women's time (and what might that lead to?). More often, perhaps, the potential problem preventing the freeing of the women's time will be that it is taken up with queueing at an installation with a poor flow or too few taps, or with an increase in the number of journeys for water that are made, or because women replace children as water-carriers; or that they are obliged to spend their freed time on another task from which it is not they who profit. Another question concerning women's interests is whether the new water system will deprive them of opportunities for socialising and communicating with other women: this is likely to be important only in places where few alternative opportunities for meeting others exist, women being generally confined to their own households.

In other places (for instance in parts of West Africa) it may be that women have traditionally dealt with questions of water through their own organisation within the community. However, when a modern supply is to be introduced, the community's male-dominated organisations are likely to take the major role, thus removing one more sphere from women's control and negatively affecting their relative status.

It will not always be possible to avoid such effects. One of the difficulties, again, may be that the local level personnel of the water supply agency are unlikely to be trained or motivated to uphold the interests of women, where it is much easier to fall in with the assumptions of the predominantly male local representatives. There may have to be a explicit recognition, perhaps in the form of a directive within each agency, that the commitment to involving women in development requires a firm stand at community level.

IV. COMMUNITY CONTRIBUTIONS

This chapter will consider community contributions to joint projects with an external agency.

THE ORGANISATION OF COMMUNITY CONTRIBUTIONS

In a number of countries of Latin America, a standardised model of community contributions to rural water supply installations has been developed (Donaldson, 1974, 1977). Although providing for simple protected springs or wells constructed by the national agency with no community contribution, and for an intermediate level of service mainly through standposts, with little community contribution, it aims to proceed rapidly to a stage where house connections are made, and the system is administered by a local water board under the supervision of the national water agency. The local water board organises the community's contribution toward construction, which may be in cash, labour and/or materials, but which does not usually amount to more than around 20% of the cost. It also collects water rates which cover operating and administrative costs. It is guided in doing so by the extension staff of the agency: in Colombia, for instance, an agency staff member is appointed to each water (or sewerage) board, together with persons from the community. (Donaldson, 1976; Mora Ramírez and López Orozco, 1976, 95.) Similar systems operate in Ecuador, Peru and elsewhere (Instituto Ecuatoriano de Obras Sanitarias 1980; Peru: Min. de Salud 1977).

This system works well in the case, typical of the larger and better-off villages in Latin America, where it is feasible to install house connections in 80% of households at least, and where external funds are available for 80% of the construction costs (Donaldson, 1976, 51-56). It is then possible easily to obtain the contribution from each household, whether in labour

or otherwise, since it will be a condition of receiving a house connection; alternatively it can be made the condition for paying a reduced water rate, as it is in Colombia. It is more difficult in smaller and poorer villages, where costs are higher for this level of service and people cannot afford to pay the water rates involved. And it depends on the possibility of the bargain with the individual household: it is usually much more difficult to obtain contributions for a public standpost supply, where the advantage to the household does not depend on its own contribution (it is not usually feasible to bar access to public standposts on the part of non-contributors).

FINANCIAL CONTRIBUTION BY THE COMMUNITY

It may well be argued that it would be better not to regard any kind of monetary payment by community members as "community participation" at all, when it is for a service such as a water supply to be provided by an agency external to the community: any such payment is a fee for service whether it is made before the service is installed or afterward as a matter of revenue collection. However, there are some practical differences (a) between payments by individual families for house connections, and payment on a community basis for a communal facility, and (b) between a communal payment for a new facility made by a local authority from its general funds, and a contribution specially raised for a new facility in a community where, perhaps, the community council has no general funds and no right to raise local taxes. It is this last case which could most clearly qualify for inclusion as "community participation".

In such a case, the contribution might be raised through a voluntary collection; some form of levy; or other forms of fund-raising such as lotteries or entertainments.

The voluntary collection appears to be most appropriate in those communities whose successful or better-off members may wish to impress others, and thus gain in social status, by making a large contribution for a community purpose. Sometimes a type of *conspicuous spending* is associated with ceremonies such as funerals, weddings, etc., or a community's annual festivals. It may be possible in some places for the same kind of motivation to be harnessed for a more permanently useful purpose.

In many parts of the world, where most lucrative economic opportunities are located in cities, an important potential source of contributions for a project in a rural community is the group of people who have migrated from that community and have become successful elsewhere. There are often home-town associations through which they are organised.

A levy usually implies an equal amount demanded from people or households whose income may be very unequal. It is difficult to modify it into a form of progressive taxation, except in the case where a cash crop is marketed through a single buying agency such as a cooperative, and the levy can be charged on the crop. In some countries it may be possible for the water agency to suggest that the levy, or subsequent water rates charged by a community water board, should vary according to the (rateable) value of the house, or other index of a family's income.

The great difficulty of collecting a levy from each household is amply shown in the study of rural water supply in Lesotho (Feachem et al., 1978, 44-57), where "in all but a few exceptional cases collection progressed at about 50c per household per year", and collections were seldom complete. More success may be achieved elsewhere in charging and collecting a levy in kind at harvest, as is done using local reciprocal help traditions in Indonesia for instance (Supardi, 1979), but the

amounts that can be raised in this way are relatively small and it does not appear to be a suitable approach for a government agency.
The collection of community funds through lotteries and entertainments appears in many countries, particularly in Latin America, to be the easiest method.

Where a water project serves an economic purpose (stockraising or irrigation of crops) as well as domestic water, a financial contribution takes on the nature of an investment for economic return. This is a very different situation, and one where, as already mentioned, it is particularly necessary to pay attention to questions of equity: undue advantage may be gained by those with more cattle or land, while equity demands that their contribution should be correspondingly greater than that of those whose gain will be smaller. In the case of irrigation, water made available for land which is unequally distributed among the members of a community will greatly increase the existing disparities in wealth. In these situations it would clearly be unjust for all members of the community, or even all beneficiaries, to make equal contributions. Yet the realities of local power in some rural communities are such that the principle of equal contributions is imposed even in these cases.
There are examples of this in the case of countries as varied as Botswana and Bangladesh (Thorp, 1978, 131-2).

SELF-HELP PROJECTS BY GROUPS OF BENEFICIARIES

Fortunately, when it is a question only of domestic water supply, the complex questions of the control of water as an economic resource, and its relation to local power structures, do not normally arise. However, it may still be possible for contributions to a water supply installation to become a form of exploitation. For instance, the following case is reported

from the Peruvian community of Muquiyauyo, well known as a corporate Community which installed its own electricity generating plant as early as 1921. (Not all the inhabitants are comuneros - members of the corporate Community.)

> "....The comuneros contributed in money (100 soles per person) and in labour.
> Each one was given his task or the distance which he had to dig. The work, which began in 1960 was intensified in 1964-1965 when the government agreed to collaborate in the project by contributing the pipes to the value of 1,988,440 soles. In 1966 the mains were installed in the "first stage" (central streets) and the Ministry of Development - later the Ministry of Housing - took over the administration of the drinking water service.
>
> From that time there was no longer a distinction made between comuneros and non-comuneros: there were only "residents" for the purpose of drinking water. Whoever had the money to pay for a house connection and for the monthly tariff could get their drinking water at home, without taking into account their participation in the work or their financial contribution. The wealthier, and many non-comuneros were among the first to obtain the water service, in spite of the fact that many of them had not contributed at all. In 1973 the "second stage" of the project, which was to take the mains to the secondary streets, had still not been built. Nor was it mentioned in the general assemblies in recent years.
>
> The project for drinking water was a cause of deep disillusionment and disappointment among the comunero population, which had been promised the installation of drinking water at home in exchange for their contributions and their work. At the same time there was an increase among some comuneros of the consciousness that they were being exploited, although it did not achieve expression through the organs of the communal institution." (Grondín, 1978, 229-230, translated from Spanish by A.W.)

This example seems to show the dangers (1) of assuming that an autonomous community organisation will be managed in the interests of all its members even when it is formally

democratic, and (2) for a government agency to disregard the history of agreements and promises when taking over a project from another agency, as well as the more general need for vigilance to preserve the interests of the poor.

Another country where self-help projects are often carried out by voluntary groups organised within a community is Kenya, and here also the projects often concern the introduction of a water supply. However, these are very frequently intended primarily for economic production (livestock or irrigation) and thus beyond the scope of the present discussion; the danger appears to exist there as in Peru that poorer people are induced to contribute to projects which benefit them little (Lamb, 1974, 57-9). There are also some cases of domestic water supplies organised by voluntary women's groups (Gachukia, 1979). There may be scope in other countries also for national water agencies to coordinate their efforts with women's organisations, rather than assuming that it is with the (almost always male-dominated) formal leadership of communities that they must cooperate in programmes of community participation.

Apart from this possibility (presumably involving all or almost all the active women of a community), it would seem that the participation of the whole community rather than a special group of beneficiaries is more appropriate when it is a question of domestic water supply, since it will generally be desirable for health reasons at least that all community members use the service.

SELF-HELP PROJECTS INVOLVING THE WHOLE COMMUNITY

The organisation of a project involving contributions both by an outside agency and by community members must be based on an agreement, made with a body representing the community. The requirements implied here are that (1) there is general accep-

tance in the community that the agreement is a good bargain, and (2) that there is a representative body with sufficient authority in the community to organise the contributions, e.g. to ensure that people turn out for work, in the case of a labour contribution.

Among possible reasons why it might not be seen as a good bargain are the following:

- Little need is felt for a new facility, in comparison with the amount of the work (or other contribution) expected. A community may see little need for a new water supply on grounds of health alone, where an existing supply is at a convenient enough location (Misra, 1975).
  Sanitation facilities are, of course, often regarded as superfluous luxuries by poor rural people accustomed to using the bush.
  It may be noted that recent investigations of the health impact of new facilities in practice may be seen as confirming these doubts - by themselves they may make little difference (WHO, 1966, Feachem et al., 1978).

- The prevailing opinion in the community may be that outside authorities should bear the cost of such improvements and not expect the community to do so. Many rural people perceive - often with considerable justification - that too little is done for them, in comparison with the services provided to urban dwellers. This opinion is likely to be strengthened where taxes - e.g. head taxes, taxes on produce marketed - are collected even from the poorer rural population. It appears that rural communities typically underestimate to a considerable degree the cost of such services as are provided to them.
  Nevertheless, unless there is a precedent of free facilities provided to another community, villagers will perhaps in most cases accept resignedly the need to make a contribution where there is no alternative way of obtaining the service.

Some practical conclusions may be drawn for the way in which the bargain is presented to the community: the agency should make it clear from the beginning how much the total cost is, as well as how much burden will be placed on community members in all respects: amount of labour, material, and any cash contributions, subsequent water rates or payments for maintenance.

If the bargain is a good one, it should be seen to be a good one. In Lesotho, it is reported that one village committee which was responsible for a water supply which had cost the government agency 1,300 rand estimated its value at 'around 180 rand'. (Feachem et al., 1978, 52.)

Another respect in which the arrangements must be seen as fair is that the work required from a community must be to the benefit of that community and not others. Sometimes this will be clear and unproblematic, as when a separate water supply is to be built for a single nucleated village. However, there are other occasions when it is more difficult: especially when a supply is to serve several communities. It will probably then be a matter of having the spur to each community built with the labour of that community alone, while the main trunk will be more difficult and will require extensive consultation with all communities to ensure that the solution is seen as fair by every community. There are likely to be complex considerations of which villagers will be conscious, such as the possibility that the benefit of the water supply is greater for the communities furthest from the source. If these questions cannot be resolved to the full satisfaction of all concerned, it may be preferable not to try to use self-help labour for the main trunk. This proved the case in a Kenyan project, where the proximity to a well-watered mountain slope meant that communities closer to the water source received less benefit than those further away in more arid land. "It is difficult to get people to work for free on a project if they cannot see a direct relationship between their effort and their subsequent benefit." (IDS, Nairobi, 1972, C-43.)

Similarly, when a community is not fully nucleated, but there are households dispersed in the surrounding countryside or in small hamlets, the question should be settled in advance which of these will use the water supply and therefore make their contribution to it.

It is as important to consider the incentives for each individual family to take part in self-help as it is to consider the incentives for the community as a whole. There may be ways in which individuals are remunerated, or there may be sanctions applied against those who fail to take part. If renumeration amounts to full payment for the work done, it could not be said that there has been a self-help labour contribution at all, though some of the advantages in terms of the sense of identification with the project one has helped to build may still be present. There are other possibilities of partial renumeration, however:

- food-for-work (the value of which can vary from less than the calories expended in the work, to more than the usual wage - it is important to keep in mind the value, since it is upon this that the incentive to work usually depends);

- reduction of subsequent water rates for the individual household involved (only practical when household connections are made for all households, or where those who do not opt for household connections receive another equivalent renumeration);

- partial payment or payment at less than the minimum wage;

- where there is a communal farm, remuneration in the form of work-points given as for work on the farm, and carrying entitlement to a share of its produce;

- no remuneration, apart from the benefit of the project.

It should again be remembered that the attractiveness of remuneration of any of these types is likely to depend on the opportunity cost, i.e. on whether paid work is obtainable at that time of year or on each farmer's seasonal need to perform tasks on his own farm. In some cases, it may even be necessary to bear in mind that cultivators or pastoralists should not be required, persuaded, or attracted by an immediate remuneration, to omit or postpone important tasks in the annual productive cycle, since their harvest may suffer unduly.

Various sanctions may also be applied to those who do not take part in the work:

- moral and social pressure only;
- a fine;
- exclusion from the benefit.

It is, however, typically difficult to bring sanctions such as fines or exclusion effectively to bear on individuals in rural communities with their highly personal relationships. Yet in any sustained effort - where work has to be carried on over more than a single day or two - it is extremely important to ensure that there are few if any defaulters. A rapid collapse in the numbers turning out for work is likely when this happens: another example of the need to maintain fairness. It may sometimes still be possible to complete the project with a small group of committed volunteers; however, it will then take much longer, increasing agency costs for supervision etc. to a point which makes self-help unattractive - and the long-term result in the community will probably be negative for harmony and cooperation.

The greatest difficulty arises in the situation, common in the case of water projects, where individual households cannot in practice be excluded from the benefit (e.g. of a communal standpipe), and where no remuneration is given for the work except participation in the benefit.

Where the traditional organisations (chiefs etc.) have no power of coercion, it then becomes imperative to mobilise the whole community in such a way that all members feel under social pressure from their fellows: this means, first of all, ensuring the cooperation of all social groups or factions. This is a task for an extension agent sensitive to the delicate questions involved: a training in community development should provide this sensitivity, but it may be advantageous, as mentioned above, for an agency responsible for water and sanitation to train its own extension agents, using trainers drawn from experienced community development personnel.

The circumstances under which self-help labour presents advantages may be discussed in terms of some of the more general arguments in favour of community participation listed in the introduction to this monograph. First, when does it enable services to be provided more cheaply, and therefore extended more rapidly if the funds saved are used for more rapid extension?

Savings are effected when reduced labour costs to the agency outweigh any losses caused by (1) inefficiences in the co-ordination of the work, with delays leading to underutilisation of skilled manpower and equipment, and (2) the use of inexperienced labour, leading to lower technical standards of construction and therefore an increased requirement for maintenance and repair later.

The savings on the labour bill must first be offset by additional costs in supervising the work, and particularly in maintaining liaison with the population but the communication with the population should be part of a wider community involvement bringing other benefits discussed elsewhere in this monograph. Apart from this, the saving will depend on (1) the importance of the labour contribution relative to total costs, and (2) whether any partial remuneration is made for it - with

the exception that food for a food-for-work scheme might be obtainable from food aid sources and hence not be directly borne by the agency or government. It is clear that the labour contribution will represent a higher proportion of total costs the simpler the technical system involved. Unfortunately, many of the estimates of savings as a proportion of total costs do not relate them clearly to the simplicity or complexity of the systems involved, and sometimes cash contributions are included together with those of labour and materials. Thus, estimates ranging from 3% to 50% are reported (van Wijk-Sijbesma, 1979, 88-100).

However, the value of the labour appears to vary typically from perhaps 10% when it is limited to the digging of trenches and laying of pipes for relatively complex systems, to a very high proportion when it is matter of doing almost all the work for simple systems - dug wells or source protection.

For the simpler reticulated systems, savings of 30% - 50% have been achieved (Tschannerl and Mujwahuzi, 1975, 10; PRODESCH, 1979, 17; cf. Feachem et al., 1978, 59). The indication is clearly that self-help should be considered first where simpler systems are to be installed; and indeed, that a new emphasis on simpler systems may be justified by the large savings which can be made through self-help labour.

Probably the single most important variable determining whether or not self-help labour reduces costs for any agency is the extent of inefficiencies in the coordination of the work. These inefficiencies need not be accepted as inevitable - it is likely that they can at least be reduced.

Before undertaking or rejecting the use of self-help labour it will be useful to examine what factors are likely to cause such inefficiencies.

There is, first of all, the possibility that at peak periods in the agricultural work cycle self-help labour will not be forthcoming because people are busy in the fields or they may be

absent for part of the year as seasonal migrant workers. It may be possible to avoid the resulting delays and underutilisation of machinery and manpower by planning for other work to be done during these periods.

Second, delays may well be encountered in arranging for the self-help labour to be available. Again, it may be possible to reduce their effect through careful planning related to local experience.

Thirdly, there will be delays if there is little enthusiasm for the project among the population or any substantial section of the population. It is vital to ensure that the incentive for the community as a whole is adequate, and that equity and fairness are preserved so that no group becomes disaffected.

Finally, delays and inefficiencies may be caused by misunderstandings between agency personnel and the community. In some cases, field personnel may adopt a superior attitude and demeanour, make unreasonable demands or offend the people in other ways. In less extreme cases, there may be irritation over what is seen as a failure to keep promises*. Such misunderstandings can also be avoided if a sensitive approach is adopted.

The use of inexperienced labour will inevitably mean that more man-hours of labour will be required for each job, at least in the early stages (unless, of course, it is compensated by an

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* "The first factor (punctual delivery of material and funds) is decisive for achieving the second (community participation), since delays and suspensions of work result in the population becoming resistant toward supporting them". (PRODESCH, 1979, 18.)

exceptional degree of well-directed enthusiasm). However, as the labour is unpaid (or not fully paid), this is in itself immaterial; in many cases, the experience gained by the workers will be an asset for other work later. More paid supervisors' time will, however, be required, and this can be a substantial cost where self-help labour is poorly organised or when the turnout is low (Feachem et al., 1978, 57-59). It may be suggested that where, in an ongoing self-help labour programme, the supervisory cost in any local scheme approaches the order of magnitude of the estimated cost of employing direct labour instead, even if it does not exceed it, it is an indication that the self-help labour programme is not going well.

Poor technical standards of construction as a result of using inexperienced labour have been reported in particular in cases where skilled assistance has been inadequate (Tschannerl and Mujwahuzi, 1975, 42; 44-8). It is important to allow for inexperience, and to provide extra supervision or skilled help; or larger factors of safety in the design (David Donaldson, personal communication). The assumption must generally be that the local people can learn how to do the tasks required, but must be given the necessary instruction. Since the learning of semi-skilled tasks is a valuable potential spin-off benefit from either self-help or the employment of local labour, there is good reason to lean on the side of teaching the local population the skills involved, even when it might be cheaper simply to bring in skilled men to do the job. There may even be advantages for the water scheme: the opportunity of learning new skills or experience with new tools may be an important additional incentive for providing the self-help labour contribution, and doing so with enthusiasm; and skills may be learnt which will be useful in subsequent maintenance.

One may conclude overall on the question of the cost-reducing potential of self-help, that there is every reason to expect worthwhile cost reduction wherever labour schemes can be made

to work well, with good turnout and organisation of the work, and that this depends very largely on the adoption of appropriate policies and procedures by the water agency itself.

But it should of course be borne in mind that savings to the agency represent income foregone by those who would have been paid to do the work.
They are therefore only justified if they lead to a reduction in the water rates charged to those who have performed self-help labour or to other poor sections of the population, or an increased ability to serve the water needs of additional communities.

Apart from cost savings, it is postulated that villagers who have contributed self-help labour will be encouraged to accept the project as theirs to look after and maintain.

This suggestion receives statistical confirmation in the case of Mexico, where de la Barra Rowland finds for a large sample of 137 communities, that of those places where self-help labour was used for construction 69% had someone in charge of the operation and maintenance of the system, and in 73% of the communities the system was still functioning at the time of the survey. The comparative figures for communities where there had not been any form of community participation were in both cases 51%. In communities where participation had taken the form of a committee only, 68% had someone in charge of operation and maintenance but in only 60% was the system still functioning. The tables also indicate that when several different forms of community participation are involved, as many as 83% of the systems remain operational; unfortunately the details are not clear (de la Barra Rowland, 1978, 28-9, Tables 3 and 4).

However, another study of 97 water supplies in seven African countries finds that it is the presence of a committtee which reduces the chance of breakdown rather than whether the villagers participated in self-help labour (Miller, 1978).

And Feachem et al. argue that "if one puts oneself in the place of a villager for a moment, one is led to expect just the opposite to occur. Anyone who has paid for a public utility such as a water supply will expect more in return, not less, than if it has been free. A typical response from villagers is that they contributed their share of the bargain when the supply was built, so it is the duty of the government to look after it thereafter." (Feachem et al., 1978, 232).

A similar attitude is reported in Botswana: "For any such matter involving the community, the traditional assembly forms a regiment (task force), whose function it is to perform the task within the specified date; however, a feeling has gradually arisen that these are government functions and should not be done free of charge." (UNICEF-WHO 1977, Annex I, 7).

These apparently divergent findings can probably be reconciled if the original bargain between the agency and the community is taken into account and it is recognised that for maintenance to take place by far the most important requirement is that adequate arrangements should be made from the beginning for this maintenance to take place. The arrangement for maintenance should form part of the original bargain. Thus the villagers should be well aware from the beginning what contribution they are expected to make to maintenance. They will not then be able to shrug it off as a responsibility of government; but in any case it is very unlikely that such an abdication of responsibility will be the main reason why villages do not carry out maintenance of their supply: it is much more likely that no reasonable arrangements have been made enabling them to do so. (See next section below).

Another suggestion is that a successful experience with water supplies will lead villagers on to undertaking other development tasks, or more generally that it will contribute to community motivation and "institution building". On these

questions, there are cogent arguments, as well as findings in particular communities*, on both sides of the argument. A self-help contribution to a project organised by a government agency does not necessarily involve a great deal of initiative; it may achieve the one collective improvement for which the population feel a strong need, or the only one for which a necessary government input is offered; on the other hand, in some places it does seem to provide a framework at local level for cooperation which is subsequently used for other communal purposes (Sung Hwan Ban, 1977). In other places this local framework already exists, and what may be lacking is a response by other government departments: a willingness to work with the people rather than (sometimes) providing a service to them.

In terms of the types of arrangement for self-help labour mentioned above, it seems likely that encouragement for "institution building" and the undertaking of further development projects will be greater where the community's work represents a substantial proportion of the total cost, rather than where it is only a question of the provision of unskilled labour for a more complex project. The main criterion, however, is probably the extent to which the community has been involved in the planning, design, and organisation of the work: community participation in decision-making may be a necessary condition for self-help projects to lead to any self-initiated development. But it is not a sufficient condition.

* The survey by de la Barra Rowland lends support to these propositions. Op.cit., esp. p. 31, where it appears that 39% of the communities where there was some form of participation in the water system went on to carry out further projects, in comparison to 22% for communities without participation. This could, however, be interpreted in the sense that some communities are more prone to undertake cooperative projects, whether in water or other fields.

It is also suggested that participation in self-help labour would lead to more efficient collection of water rates. De la Barra Rowland finds in Mexico that it is less effective than the formation of a committee (42% of communities pay on time, as against 52%). The arguments would again apply that when people have contributed in one way, they may well feel that they have done their share and be more reluctant to contribute in another. In any case, the effective collection of water rates seems to depend primarily on other factors.

A conclusion seems justified on the whole question of the benefits of self-help labour: that apart from the reduction of costs to the agency the benefits do not by any means flow automatically from the use of self-help labour, but must be sought separately be creating appropriate arrangements.

A benefit of a different kind is implied when it is argued that the willingness to provide self-help labour should be used as a criterion for selection of communities to benefit from a programme. The problem in using this in selection for purposes of water supply is that it is an extremely crude method of judging need or even felt need: whereas most or almost all of the rural population may want a supply (as they will want to benefit from any other subsidised government programmes), some communities will be better organised than others to take up the offer. As mentioned in chapter II, providing water to communities which come forward most readily with a commitment for a contribution is likely to favour the better-off communities with better connections - in all senses - with urban centres, and which are also favoured by other departments in other ways. There is also the problem of over-response: in Lesotho, far more villages were found to have applied for a supply under the self-help programme (an average of 97 per year) than the number which the agency has the capacity to install (29 per year). (Feachem et al., 1978, 43). If, to avoid the problem of over-response, the bargain is made less favourable to the

community, there is an even greater likelihood that the generally favoured communities, with larger resources, will be in a better position to agree to make a larger contribution.

However, willingness to construct and use household latrines has been used in several small programmes, apparently with some success, as a condition of receiving help with a water supply or a health clinic (Buckles, 1979, 52-3; Goyder, 1978, 164). The whole community has to agree to dig the latrines, and the water supply is only introduced when a high percentage has installed and is using them.

A subtle difference must be noted: it is one thing to use the willingness to provide self-help labour - whether on the installation of the water supply itself or of individual latrines - as a condition of obtaining agency help, in the expectation that the communities pre-selected and presented with the condition will agree to it; but it is quite another thing to use the same condition as the basic criterion of selection by proclaiming the policy and then granting the water supply to the first communities which agree to it.
Willingness to make a labour contribution is unlikely to be as good an indication of real need for the water supply, or even of felt need, as a rapid appraisal of objective factors such as the journey time required to fetch water from existing sources. (It might be considered that a good criterion for selection would be provided by the simple calculation of the total daily journey time spent by members of the community in collecting water: see Appendix 3, p. 157).

OPERATION AND MAINTENANCE: TRAINING AND APPOINTMENT OF LOCAL PERSONS

Whereas it would appear that water agencies have tended to over-emphasise self-help labour in comparison with other forms of community participation, too little attention, in most

cases, has been paid to the training and appropriate support of community members to be responsible for operation and maintenance of water supply systems.
It is reported that in some countries rural water supplies are failing at as fast a rate as they are being constructed (Saunders and Warford, 1976).
Since the actual work required for effective maintenance is comparatively insignificant, there are evidently great mistakes being made in the approach to the organisation of maintenance.

Failures are common both in the case of agencies which leave maintenance to the community, and in the case of agencies which assume direct responsibility for maintenance while the community is not permitted to take any role beyond reporting a fault. In the first case, the basic reason for failure appears generally to be that the community is given insufficient (if any) support in the organisation of a system of maintenance. In the second case, the evidence is of a lack of regular servicing, of bureaucratic delays in the response to reports by communities of faults, and of insufficient concern at higher levels to provide adequate resources, including transport, for maintenance because of the greater public attention paid to new supplies. Another theme is inappropriate design and the use of inadequate equipment (e.g. weak handpumps, narrow pipes), which, it is suggested, could often have been avoided given sufficient consultation with the community and/or observation of the results of installations in other communities.

Design or equipment may be inadequate in many ways, but some of the failings most frequently mentioned as throwing an additional burden on maintenance and repair capacity are the following: low flow (leading to queueing and sometimes causing people to prefer polluted sources or to damage equipment in the effort to get water); weak handpumps (use of handpumps designed for household rather than community use); or, on the other hand, the provision of powered pumps in the expectation that

the community will purchase the fuel, when the community is not organised to do so (Feachem et al., 1978, 31-2).

If the design fails to meet the needs of part of the population, there is the danger of deliberate damage by those excluded. This can apply, for instance, when there are cattle needing water, but the supply is limited to human consumption: the clash of interest between cattle owners and cultivators may lead to "vandalism".

Involuntary damage can result from unfamiliarity of the users with the taps etc., unless an explanation of their operation is given.

Usually, a village community which lacks its own organs of local government is not naturally well organised to undertake the operation and maintenance of a water supply. Such a community may well be able to gather funds for a once-off occasion such as the construction of a supply; it may well be able to commit itself to the provision of self-help labour and ensure the attendance of its members; but it is most unlikely to be equipped for the regular collection of funds, or even for the irregular collection of small amounts as may be needed for the replacement of washers or other maintenance jobs. Thus, it is most unlikely that such a community will be able to organise the purchase of fuel or other regular supplies; nor of spare parts; nor is it likely to be able to pay any regular remuneration to an operator or community member responsible for maintenance.

Therefore, if the community is to be in any degree responsible for maintenance, the first question which must be settled from the beginning is: which of these types of expenses will be incurred and how will they be met? These questions should be addressed as part of the initial design of the project with the community, since the answers may well influence the technical

solutions adopted. For instance, it may be decided that hand-pumps should be installed instead of powered pumps because it will be impossible to ensure that cash is forthcoming for the purchase of fuel.

The agency may, of course, be able to meet these expenses, especially where a water rate is charged or where there is a policy of providing rural water supplies free as a re-distributive measure or a basic right. Alternatively, it may be possible to make the local government responsible for the expenses. This may work best where the whole local government area is supplied in a similar way.

Apart from the difficult problem of expenses, the question of precise allocation of responsibilities is of the greatest importance. Unless it is very clear who is responsible to undertake preventive maintenance, to organise a work party to re-bury an exposed pipe, or to take the initiative in carrying out a repair, it is very likely that these tasks will remain undone, at least until the supply breaks down completely. This is largely a function of the well-known principle that a responsibility shared is a responsibility diminished: each person tends to wait for another to take the action required, and when others are inactive, to follow that lead and take no action himself (Macauley and Berkowitz, 1970). In some communities, there may also be a reluctance to take on a leadership function; as would be necessary in organising a working party, unless one is in a recognised leadership role such as that of chief or priest; if these formal leaders do not take up the matter, then others may fear criticism for doing so. Generally there is no precedent in traditional village organisation for the allocation of responsibilities over modern installations such as a water supply.

It follows that it will be necessary publicly to identify one individual as primarily responsible for the water supply, or

where the responsibility is divided to make it clear who has what duties and rights (the right, for example, to call upon assistance).

Last but not least, there is a need for training to be given by the water authority: a practical training which prepares the person(s) responsible to carry out all the tasks required. If the technical knowledge and skills available in the community are at a low level, then it may be necessary to take this into account at the design stage: to use a simple system so that the tasks are not too difficult, or a self-contained system that will not require skilled maintenance for its internal components. It also follows that if it is not possible to bring the skills of community operators up to the level where they can deal with major repairs to the system, the concentration must be on normal operation and preventive maintenance, and there must be adequate provision for the agency to carry out repairs when these are required. It is preventive maintenance which is most commonly neglected.

Following initial training, there will be a need for supervisory visits by a professional maintenance team. Each such visit may be seen primarily as an occasion for further training in preventive maintenance tasks, and if this training goes smoothly it should be possible for the frequency of visits to be reduced. Attention has to be paid to ensuring that the operator takes adequate account of early signs of trouble, has sufficient tools, can obtain spare part items, and can otherwise remedy the situation before there is a breakdown.

The question of remuneration for the operator may well be a difficult one, especially in the case of systems of medium complexity. In simple systems, such as those which do not require any tasks to be carried out every day, it is likely that the operator will be willing to take on the duties with no

compensation beyond the technical training received*. Highly complex systems will require full-time attendants at full wages. However, there are many systems of medium complexity which require perhaps half-an-hour or one hour's work every day, and more occasionally. It is then likely that no community member (or not suitable candidate) is willing to take on the duties as an unpaid volunteer.

It will be necessary to adopt the same solution in all communities affected and the one indicated is a part-time appointment. Often, however, neither the agency nor the local government has appropriate procedures for the regular payment of part-time workers; there may be pressures for full-time posts to be created, assuming that the funds would come from outside and not be a burden on the local community. In many countries, however, the lowest full-time government wage level is high in comparison to most village incomes, and there would be no justification in singling out one person for such a favoured position.

One possibility is for the operation and maintenance of the water system to be combined with other work.

Serious consideration may be given to the feasibility of combining the position with that of health educator or of community health worker. This last possibility will depend on the policy of the health authorities toward the training and support of community health workers; there is currently growing recognition of the need for some form of health worker in each community to provide preventive and curative care, in the

* It may well be necessary, during training, for the water agency to meet the expenses of the trainees, including payment of a sum to compensate them for the days or weeks missed from normal work. However, the rate should not be set to high as to attract candidates merely on account of this payment. An appropriate rate will be that current for agricultural labourers for each day missed.

context of a Primary Health Care system. It may, in fact, be argued that the full advantage of a pure water supply can only be realised if complemented by health services of this sort. A community health worker would be able also to stimulate sanitation and hygienic use of water, and it would be appropriate if he or she were also responsible for the water supply. A variant of this solution might be the appointment of two members of the same family, man and woman, to cover between them all aspects of health, sanitation and water*.

A second possibility has already been mentioned, originally suggested in Tanzania: to recompense the operator by giving him a more general technical training and helping him in opening a mechanical workshop.

In summary, the appointment of a local person to be in charge of operation and maintenance involves the following steps:

- Deciding whether the operator should be a man or a woman, whether more than one person should be trained, and whether it should be combined with related work (in consultation with the community).
- Deciding to whom he or she will be responsible.
- Settling the question of a salary or other form of remuneration, including during a period of training.
- Selection of the individual(s) (in consultation with the community).

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* The village health worker programme run from the Government Erskine Hospital, Madurai, Tamil Nadu, India, invited male members of the families of their village health workers to attend training sessions together with their wives or mothers. They then offered invaluable help, especially as they had a higher level of literacy. (Sheila Zurbrigg, personal communication).

- Arranging initial training (which might be combined with more general training, either in health and health education, in sanitation, or in mechanical skills).
- Arranging subsequent on-the-job training and supervision.
- Providing adequate tools and the materials and spare parts required for preventive maintenance and minor repairs.
- Ensuring that any difficulties arising over remuneration, assistance over repairs, etc. are solved.

It should not be assumed that a community can take on these matters unaided. It is also, of course, a big requirement for a water agency, if any extensive programme is undertaken. The largest single element is the requirement for training.
There may, therefore, be a case for reducing the initial training period to a minimum while the programme is in its early stages, but adding a longer period of retraining at a later date.

A spin-off advantage which is often mentioned from the use of community members in operation and maintenance is that skills will be learned which can be used in other contexts. In Tanzania, it has been suggested that the operator should be helped to open a general mechanical workshop for the village. However, the main advantage is to avoid the frequent situation whereby "waiting for a technician to come from the district or regional headquarters may at times cause unnecessary delays in effecting a minor repair that could easily have been handled by the local people with a minimum of training and repair tools". (Tschannerl and Mujwahuzi, 1975, 31).

Community participation in maintenance cannot always be expected to reduce the costs of a programme (Feachem, 1979, 16). But it may be expected that it will lead to more effective maintenance, and thereby to an ultimate reduction in the cost of a day's or a year's effective service to each community. This applies particularly to the smaller rural communities, not so easily reached by a maintenance team.

V. COMMUNITY ACTION AND THE CAMPAIGN APPROACH

MASS ACTION

We now turn to those forms of community participation in which the role of the external technical agency is more limited. It may be entirely absent: government may launch a campaign for community activity through the mass media, local authorities or party organisations, or the initiative may come from voluntary agencies or from within communities themselves. A technical agency may be called upon to provide help in expertise or other forms to those communities which take up the activity; it may, however, act as the primary sponsor and stimulator of activities in communities. These forms differ from those discussed so far, however, in that the organised community basically carries out the activity rather than merely contributing to it - and it is the whole community which carries it out as a collective effort, rather than either a group of beneficiaries or a local authority in the exercise of its administrative responsibilities.

A water agency may also consider a combined approach under which larger communities (and those where the technical problems of bringing in a water supply are greater) are catered for in participatory programmes of the type discussed in the previous chapter, while simpler improvements are encouraged in other communities in the ways outlined here.

There are many quite simple and small-scale activities in the field of water and santitation which are often carried out in this way.

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* "Mass action", "community action", and "collective action" are expressions with substantially the same meaning, though one or other may be preferred in different contexts or countries. They will be used interchangeably here.

Particularly in villages where elements of traditional authority survive, work parties are organised to clean up the public areas and perhaps to protect a water source or to dig a well or even a communal pit latrine. In countries where irrigation is part of a longstanding indigenous technical tradition, far more complex water systems may be maintained or even built in this self-reliant traditional way.

MASS ACTION IN A COLLECTIVIST SOCIO-ECONOMIC SYSTEM

The extent to which these traditional collective work activities can be used as the basis of further improvements in water supply and sanitation today probably depends on the country's general orientation to collective or to individualistic paths of development.

In countries following a mainly collectivist path, such as the People's Republic of China, substantial improvements in water supply and sanitation can be and have been achieved by popularising throughout the country the models which prove successful in pioneering areas, and by organising campaigns to emulate these models. Such campaigns constitute, for the period during which they are introduced, an important focus of attention for all local government and party officials, and in this sense carry the full weight of the state behind them. It is perhaps also crucial that the ruling party should enjoy the confidence of the broad masses of the population, and should relate closely to the population in its formulation of the policy for mass action: otherwise the social distance between officials and people would perhaps inhibit the officials from concerning themselves with detailed and unprestigious matters, while the population would not be so willing to make the substantial voluntary efforts required in this type of campaign. In China, Mao's mass line approach is well known: "We should go to the masses and learn from them, synthesise their experience into better, articulated principles and methods, then do propaganda among the masses, and call upon them to put

these principles and methods into practice so as to solve their problems and help them achieve liberation and happiness". (Mao, 1943: 1965, 8). In VietNam, too, emphasis has been put on the need for closeness between government and people: (in the area of hygiene) "nothing is accomplished by enforcing regulations. There are no other means than persuasion - patient persuasion. All the political, economic and cultural assets of the new regime must be turned to account to achieve a systematic mobilisation of the mass of the people". (Le Zan, 1972: McMichael, 1976, 90). The persuasion refers in this case to the campaign for achieving the "triptych" of rural hygiene: the double vault composting latrine for each household, wells protected with parapets, and the bathroom, together with changes in hygiene practices. Easily remembered targets of this type (a small number of points to recall or of changes to be accomplished everywhere and for each household) are a feature of such campaign in several countries.

Campaigns can be organised on a nationwide basis, but the details varied according to local needs and circumstances at the discretion of local authorities: in VietNam, for instance, the double vault composting latrine is introduced in the regions where human wastes were traditionally used as fertiliser, but in certain mountain regions where they were not, a form of pit latrine has been popularised instead (VietNam, Dem. Rep., 1968: Rybczynski et. al., 1978, 62).

Collective farming offers the strongest basis for collective work in campaigns of mass action, because it is possible to use an incentive to participate for each individual who turns out, without having to spend funds which the community does not have. For each day spent working on the water or sanitation project, each participant can be given a day's work-points as if he had been working on the cooperative or collective farm. Each work-point carries an entitlement to a share of the current year's harvest of the farm. Thus the individual is

remunerated for his work by the collective or cooperative to which he belongs, while the collective gains an investment for the future through a form of saving which should be a relatively light burden. It can, however, be pushed too far by an over-enthusiastic leadership to the detriment of work on the current year's production, leading to poor harvests and a loss of confidence. This was apparently one of the problems which arose in China during the period of the "Great Leap Forward" (1958-62), while another was the partial abandonment of the principles of remuneration outlined here, and their replacement with calls for purely voluntary labour.

Extensive reliance on pure voluntarism in sustained or repeated campaigns for mass action can lead to the opening of a gap between formal norms of collectivist enthusiasm expressed on public occasions, in speeches, etc., and informal norms according to which, privately, much less devotion to the public cause is expected. This will have an adverse effect on the productivity of voluntary work, and may widen into public cynicism or rejection of collectivist ideals. Therefore, an essential part of a successful approach to the mobilisation of the masses is a close sensitivity to the informal norms or attitudes among the population concerning how much effort should be expected, especially when the benefit will accrue not to the small group to which the individual belongs, but to the inhabitants of a whole district or the country in general. It applies to the wide range of efforts which are called for, rather than particularly to those related to water and sanitation.

In spite of such caveats and ultimate limits on the amount of collective effort which will be forthcoming, the collectively-oriented or "socialist" countries can and do carry mass action much further than others, in all spheres including water and sanitation. Both the motivational and the organisational factors are favourable: prestige and esteem are accorded to

those who work in the common interest, and there are established structures for them to do so.

In China, very large multi-purpose water projects have been carried out making the maximum use of mass action, by bringing in a large number of work teams and brigades to work at the construction sites. Individuals are remunerated in work-points as on smaller schemes, while the principle applied at the levels of work team and brigade is that of fair compensation from those which will benefit more to those who will benefit less or not at all from the work being undertaken (Ho Chin 1975; Tang Feng-Chang 1975, 68-79; Unger, 1974, 99).

MASS ACTION IN A CAPITALIST OR MIXED ECONOMY

In a number of African and Asian countries, following independence, there have been moves to revive traditions of communal labour. Administrative structures have been created by which communities can obtain government help for development projects on which they work collectively. An example was the provision for "shramdan" (communal labour) in the Indian Community Development programme in the 1950's: it was at first seen as an important element of rural development. In India, and in several other countries, the emphasis subsequently shifted away from community action.
Perhaps this was largely because directly productive economic improvements came to be seen as most important, and in a non-collective economy these improvements could not be based on communal labour. Community action remains, however, a suitable means to provide for a community's social needs.

One noteworthy campaign in a country with a mixed economy and orientation was the Mtu ni Afya (Man is Health) radio study group campaign in Tanzania. It has not been the only one of its type, but it is certainly one of the best documented (Hall, 1975, other articles). 75,000 study groups were organised

throughout the country for the campaign, in 1973, through the established adult education network and that of health education officers. Study group leaders were trained, not to teach others, but to guide the group's studies and stimulate the groups to collective action following their discussions of the weekly radio broadcasts which constituted the campaign. The groups carried out actions including clearing vegetation from around the houses (28% of a national sample of groups studied in an evaluation did this), building, repairing, or rebuilding latrines (20%), clearing stagnant water (24%), and clearing the area around water points (11%). In one district, no single house was without a latrine at the end of the campaign. In a number of communities, enthusiasm spread from the members of the study groups themselves to the community in general (Hall, 1975). Subsequently, other short-term campaigns on other topics were launched through the same network. It is clear that much of the momentum came from the importance attached to the campaign by TANU, the ruling party, and from the attention paid to the organisation and preparation of the groups. The lesson appears to be that when party and government as a whole commit themselves to a major campaign, including mass media and structures of organisation at local level throughout the country, a popular response can be achieved quite out of proportion to that which is normally forthcoming to the urgings of sanitary inspectors or health educators. The masses may be said to respond, in fact, to the importance attached to mass action by government.

In non-socialist countries the construction of complex water systems will generally be undertaken by water agencies, and if community participation is involved it will be in the form of the participatory methods discussed in the previous chapters. It is only in socialist countries, organised to take full advantage of the population's potential for self-reliance, that larger-scale systems can be constructed primarily through local initiative and resources. However, even in countries with a

capitalist or mixed economy there would appear to be every possibility for the development of small-scale village community action projects, and it can be said that this potential has been neglected or under-exploited in practice despite the prominence frequently given to calls for collective work at the level of speeches and slogans. What is frequently lacking is sufficient government support in the form of funding and directives to local administrative organs to give priority to assisting community action.

For water and sanitation projects, what may be required are such materials as cement or such expertise as that of a professional well-digger - considerably less than what will be required for complex (e.g. power-pumped and reticulated) systems; though such items as pipes for simple reticulated supplies might also be made available in this way, through local authorities or water agencies to communities prepared for organise projects for themselves.
Without any outside help, many communities organise regular task forces to clean up the public areas or for other small-scale activities of environmental sanitation such as pond-drainage, and these communities only require small amounts of assistance to extend their activities.

On a limited scale, such support is already being given to certain communties: e.g. in Brong-Ahafo, Ghana (Yeboah, 1978, 48-50; van den Berg, 1978, 19-21; IDS Health Group, 1978, 235-8), where the Ghana Water and Sewerage Corporation made available to villages the services of two well-sinkers while there are provisions for district authorities to provide cement for minor works of this kind. However, such schemes falter on the low importance accorded them by authorities whose sights are set on more "modern", less self-reliant solutions. It is true, of course, that the topography and geological formation place limits on the technological choices available (Beyer, 1976), and sophisticated equipment is in some places essential.

In other places, such as the Sahel, attention is given to dug wells as a matter of course, with a lack of feasible alternatives, and community participation plays its part (Hima, 1976).

But there are a number of countries where attention is at present concentrated on relatively complex systems for small towns and large villages, while the potential for smaller communities to carry out their own improvements with minor help is not being realised.

The existence of guinea worm in a population may be considered an indication that insufficient attention is being paid to this potential, because the transmission of this disease can be interrupted by only minor improvements to the sources from which water is drawn (i.e. enabling people to draw water without wading into the source).

VI. COMMUNITY EDUCATION AND BEHAVIOUR CHANGE

The potential health benefits of a clean water supply frequently fail to be realised because infectious and parasitic diseases continue to be transmitted by routes which remain unaffected:

- Old, polluted sources of water continue to be used for drinking purposes for reasons of preference or convenience.

- The water from improved supplies is contaminated between the point of delivery and the point of ingestion - in carrying vessels, storage vessels, drinking vessels, and handling.

- Water, though made more accessible, is not optimally used in personal and domestic hygiene. In some communities where studies have been made, following the introduction of a new supply which brought water closer to the home though house connections were not provided, it has been found that the quantity of water used has not increased: hygiene habits have presumably remained unchanged.
  A particular focus may need to be given to handwashing. (White et al., 1972, 129; Feachem, et al., 1978, 106.)

- Waste disposal methods and environmental sanitation are not improved: advantage is not taken of the opportunity for parallel efforts in this field.

In many countries at present the installation of water supplies and even the provision of latrine slabs take place without any concurrent health education programme. In these circumstances, it is not surprising that the health gains are minimal or undetectable. It is now generally recognised that a much greater

emphasis needs to be put on the integration of a health education element into a combined water and sanitation programme.

One of the problems of such an integration is that health education departments usually have their separate programmes, and cover fields unrelated to water and sanitation (e.g. family planning). It is likely that if such a general health education programme is simply implemented in a project area, the effort will be largely dissipated because few connections will be made specifically with water and sanitation facilities being introduced. The need is for a specific, separate health education approach applied in conjunction with the introduction of facilities, and itself using participatory methods.

THE CONCEPTUAL BASIS OF A PARTICIPATORY APPROACH TO HEALTH EDUCATION

It is axiomatic among students of the diversity of human societies (ethnologists, social and cultural anthoropologists) that in general the behaviour patterns of social groups are well adapted to the survival of the people in their environment, given their technological knowledge. The behaviour patterns and related beliefs and attitudes have developed over a considerable time in an environment which has usually been changing relatively slowly, so that gradual adaptation has been possible.

One result of this relative stability of conditions from generation to generation is that behaviour patterns which are in fact well adapted to survival may persist (or perhaps even become established) without the people being conscious of their survival value: they may be seen as simply traditional - "our way" - or endowed with religious significance, or explained in

some other terms*.

When the environment is suddenly subjected to rapid change due to external forces which impinge on the local society, or when new technological knowledge becomes available, the old behaviour patterns with their related beliefs may no longer be well adapted for survival in the new circumstances. It used to be assumed by students of social change and development (and sometimes still is) that the main problem to arise in these circumstances would be conservative adherence to traditional practices. The remedy was generally seen as school education which would give the new generation a "modern" belief system well adapted to the rapidly changing environment. The "modern" person would adopt rational practices, altering them when required in his best interests.

It has become clear that things are much more complicated than allowed for by this assumption.
On the one hand, there is much less resistance to change in general, and much greater rationality of behaviour among people without school education, so that practices are changed when change is perceived as being worthwhile. It has been necessary to re-evaluate traditional practices and the attitude of people

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* A *possible mechanism for the establishment of useful* practices in this context is suggested by the following case, quoted by Gordon Harrison in his history of the struggle against malaria. It dates from 1930 in Brazil: "They (aedes aegypti mosquitoes carrying yellow fever to new areas) went by coastal vessels, by road, and perhaps most ingeniously in the baggage of religious pilgrims. Aedes, Soper discovered, regularly laid her eggs in water jugs carried by such pilgrims in northeast Brazil. To stop that, Soper found an ally in a ninety-year-old unfrocked priest, Padre Cicero, who was a powerful cult leader among the peasants of the northeast. He asked Father Cicero to let the water jugs be oiled. The old man agreed and did more: he connived at a rumour, soon circulated country-wide, that the oil was good for rheumatism." (Gordon Harrison, 1978, 212.)

toward them: it is often found to be an inquiring attitude, and experimentation is not infrequent. On the other hand, educated persons do not necessarily reject traditional practices as a whole, but often reaffirm many such practices as part of their cultural identity. Individuals who are successful in the modern market economy may use their increased income to conform more closely to the ideals of the traditional society, improving their social status by adopting traditionally approved practices.

It is no longer possible to see community education in the paternalistic terms which used to be current: the vision of the all-knowing and all-understanding (as well as highly committed and highly conscientious) change agent who "should help people become competent to build their own cultures, communities, and nations ... he should hope to help them achieve the kind of flexible intelligence people need for an era of change". (Biddle, 1968, 194.) There is not such a wide gulf between the competence of the average change agent and that of many members of the community which is to be educated; and any difference which does exist is likely to be due to the possession by the change agent of some particular technical knowledge, rather than to a more flexible intelligence.

It is likely that the over-estimation of the ability of the change agent, in normal circumstances, to bring about a radical change in the way of life of a local population extends also to the area of cooperation within the community. Where cooperation has not been in evidence in the past, it may be because there has been too little rational incentive (for at least some of the people) to engage in cooperative activities, rather than because the tradition or culture is uncooperative.

Community education is moving, therefore, from a somewhat messianic view of community development as a benign transforma-

tion from a traditional to a harmonious and cooperative modern society, towards a more mundane and practical emphasis on spreading appropriate technical information (in the field of agriculture, nutrition, health etc.) and encouraging community participation by treating community members as rational partners in the process of development. This entails a dialogue as between equals, and it entails paying attention to the reasons why sufficient incentives may be lacking for individuals to take part in cooperative activities.

However, no human population changes its customary practices merely as a result of receiving technical information which indicates that it is in its longterm best interest to do so; if it were otherwise, there would for instance be no problem of smoking in advanced countries. The task of changing health-related behaviour in poor communities is of a similar kind: reluctance to change is due largely to the fact that a change requires a certain and repeated sacrifice (in terms of satisfaction foregone, or additional effort or expense) for the sake of a possible future benifit, a reduced risk of illness.

Clearly, in such circumstances, most people do not simply make up their minds to change their practices by making an informed calculation of the risk and concluding that it is not worth running. People are influenced to a varied degree and in various ways by their social relationship with others.

Social psychology has investigated these processes of social influence. However, the literature is enormous and the brief account of some of the relevant points which follows cannot do justice to it. No generally agreed model has been arrived at of the processes of attitude and behaviour change.
The relevant social psychological and communications studies can broadly be divided into those concerned with:

1. interpersonal and group influence on individual judgement, perception, and behaviour;

2. persuasion, or communication and attitude change; and

3. the diffusion of innovations.

The first group of studies have established the importance of the reactions a person sees in others to the way he himself interprets a situation and acts within it. There are tendencies to conformity, which are stronger in some situations and in some individuals. Conformity itself, however, may be an outcome of a variety of different processes, including:

- the delegation of responsibility to those whose expertness one trusts;
- in uncertainty, giving the benefit of doubt to others;
- the immediate persuasiveness of persons and groups;

as well as agreement on the basis of independent judgement (Asch, 1961).

Studies of communication and attitude change have investigated the persuasiveness of communications where a "message" (openly persuasive) goes from a "source" to a "receiver". Some of the conclusions of a very large body of research may be briefly summarised by saying that the persuasive power is often found to be greater when:

- the receiver sees the source as expert;
- the receiver has a positive attitude to the source;
- the receiver was originally neutral rather than committed on the subject in question;
- the receiver has a relatively low level of self-esteem (and the message is simple and easy to understand): low self-esteem is related to a high degree of susceptibility to influence of others;

- explicit conclusions are drawn in communicating the message (because the receiver may not draw them for himself: but this does not apply to the more complex teaching situation where he can be led to do so);
- counter-arguments are refuted within the message (this makes the receiver less susceptible to counter-arguments encountered subsequently);
- the message is repeated by the same or other sources (but an upper limit is quickly reached beyond which further repetition has no effect). (Jaspars, 1978).

The research on the diffusion of innovations has been conducted largely on the adoption of new agricultural practices by farmers.
These studies have established correlations between early adoption and characteristics such as:

- high socio-economic status (it has been pointed out that this may be mainly because the better-off can afford to take the risks involved in adopting new practices such as planting different varieties).
- greater exposure to communications recommending new practices
- more contact with the extension agents
- a higher level of social participation
- a higher level of aspiration and achievement motivation (Sandhu et al., 1977).

Such findings tell us little about how to encourage innovation among those who do not stand so high on these characteristics.

Indeed, a serious problem has resulted from the focussing of attention on the characteristics of early adopters. It encouraged an emphasis in extension work on the "most progressive" farmers, exacerbating a tendency to favour the better-off with innovations which might never reach the poor

(Röling et al., 1976). It cannot be assumed, either in the case of innovations - agricultural practices or latrines - or in the case of attitudes and opinions, that there is a two-step flow in which, if "opinion leaders" are first convinced, they in turn will then persuade the rest of the population (Nan Lin, 1973). Yet this assumption has often been implicit in the design of extension programmes.

In considering how these varied findings may be used in an approach to community education, the first step may be to attempt in the light of the findings to advance upon the simple sequence knowledge - attitude - practice as a model of how changes occur in the individual's relationship to new practices which are being introduced. The knowledge-attitude-practice sequence simply posits a logical order of events but does not provide any insight into the processes involved. It cannot explain why some people make the transition between knowing about a practice and having positive attitudes to it, while others do not; or why some people go on to adopt the practice while others do not. (Park et al., 1975, 3-6)

It has also been pointed out that such a sequential process "does not foresee failure or discontinuation if all steps are carefully followed" and that this has led to over-concentration on audio-visual aids as means of communicating knowledge, on the assumption that if knowledge is transferred adoption must follow. The model pays too little attention to the role of a person's values in determining his behaviour, and therefore to the role of methods such as small-group discussions with two-way communication in changing attitudes and behaviour. (WHO 1978, esp. 5-6)

The sequence itself has also been questioned: things do not always happen in such a logical order. In particular, changes in attitude often follow changes in practice, which are themselves adopted in uncertainty or with a neutral attitude, or

under social pressures which may be situational and temporary (Kelman, 1962).

We assume first a rational person, not oversusceptible to influence from others, but with limited knowledge in the area in which a new practice is being recommended. There will be two kinds of considerations in his (her) mind: (1) the likely benefits, losses, and risks to him (her) of adopting the practice in itself, and (2) the likely social benefits, losses and risks of being seen to adopt or not to adopt the practice. In weighing up (1), the likely direct benefits, losses, and risks, his information is imperfect and he is likely to take into account (a) the reasonableness of the argument itself as he perceives it, (b) the confidence he can have in the person or agency presenting it, and (c) who else is accepting it, especially in terms of his perception of their being in a good position to judge, and that they will take into account constraints similar to his own (i.e. are in a broadly similar social position), as well as their numbers. In weighing up (2), the social benefits, losses, and risks, the rational individual will be concerned with complex questions of status and the risk of losing approval by departing from the traditions or conventions of the group to which he belongs.
In any actual case, of course, only some of these factors are likely to be of overriding importance, while others will not be considered, but it may be useful to use this perhaps over-rationalized view of man as a starting-point.

In the next place, however, it should be noted that some individuals have personality traits characterised (by Milton Rokeach) as "inability to discriminate, evaluate, and act on information independent of source", and marked by compliance to authority or conformity to the beliefs and actions of the group to which the person belongs, to tradition, convention, or to the forceful leadership of a more self-assured or charismatic personality. Moreover, such "other-directedness" or conformity

is clearly more prevalent - induced by childhood socialisation - in some cultures than in others. It is also clear that in many cultures it is more prevalent - induced by socialisation - in females than in males: this is an important aspect of the subordination of women.

We now have a basis for a classification of the reasons for which, alone or in combination, a person may adopt a change in behaviour relevant to health.
A community education programme can then attempt to establish mechanisms in the community which use or operationalise these reasons for change:

1. The person understands, more or less well, the process by which the change is likely to have a beneficial effect. Motiviation is directly in terms of the health goal, and is self-directed.

2. The person accepts authoritative assurances that the change will have a positive effect for health, without necessarily paying much attention to the reasons why this is so.
   The acceptance may be hedged with skepticism, and it may be short-lived.

3. A reference group of people of higher or similar status adopt the change, so that it is endorsed by group judgement. (A reference group is a group whose norms of behaviour a person takes into account in his own actions: it may be a group of which he is a member, or a group of higher status which is admired.)

4. Informal social sanctions or rewards may play a role: people may seek admiration for innovating in directions others will follow, they may seek status from adopting practices which others of high status have adopted, or

they may fear to incur a loss of respect from others by omitting to do what has become conventional. (Equally, there are social sanctions which may cause a person to refrain from changing practices.)

5. Formal sanctions (punishments, fines, etc.) may be threatened against those who fail to perform the action. This may apply to children within a family, or others in subordinate positions, while the motivation of the parent or superordinate can be classified in another category. Some societies show great readiness to prescribe formal sanctions in an attempt to regulate behaviour: their actual imposition, however, may be more difficult.

In the latter categories, it is no longer the health goal itself which is sought, but social benefits.
There is strong evidence that status considerations are often more important than health considerations in the adoption of new practices, especially when they are open to public view. When people are considering constructing latrines, for instance, they may well attach more weight to what the neighbours will think than to any health argument. The danger implicit in this is that the latrines will not be used: more generally, that the practice will be adopted in appearance but not in all its essential details.

All new actions require an effort, take time, and may be seen in terms of "opportunity costs" - the comparison of the benefit seen to be gained with the benefit from some alternative way in which the effort and time - perhaps also other resources where these are involved - could have been spent. It may well be as important to reduce the costs (in time, effort, or money) in order to induce a change in health-related practices, as it is also make the positive argument or the social inducement for the change.

Thus, there is a sixth reason for change which is in a different category from the others but which is equally if not more important:

6. Facilitation: people may change their practices when it becomes easier for them to do so.

Any policy to persuade people to change their behaviour should provide as far as possible the means which makes it easier for them to do so. A special case exists where for health purposes it is necessary to give up a pleasurable activity (e.g. smoking). In this case, facilitation may include providing for a substitute activity which is harmless.

Each situation in which it is desired to change the practices of a population requires a careful examination of the likely success of different approaches using different combinations of these reasons as means to effect the change. Too often, it has been assumed that an authoritative recommendation by a semi-professional health worker, perhaps accompanied by a short explanation, will or should be enough to persuade most people to change their practices; where this fails, the existing practices are said to be too "deeply ingrained", and it may then be thought that a change will require many years of patient education. There are a number of reasons why such a recommendation by a health worker may not be enough to persuade a village to change.

The villager may view the change as no doubt desirable for those who can afford it but not feasible for poor people in village conditions.
Or it may be clear that the health worker is only passing on precepts which he or she has learnt from others, with little real understanding.

For these reasons, growing attention is now being paid to facilitation and also to dialogue between the expert and the population, so that the reasons for change are better understood by the population, and so that the constraints which make change difficult are better appreciated by the expert, who may be able to help remove them. There is a problem, however, in that an approach through dialogue is more difficult for many middle-level health workers (or similar extension agents) whose own training has been largely in terms of precepts rather than full understanding. They may find it impossible to encourage dialogue without undermining their own authority, since they will not be able to answer all the questions which will come up in the course of the dialogue.

COLLECTIVE COMMITMENT TO CHANGES IN BEHAVIOUR

"Only when a whole community takes up the idea of sanitation, perhaps with the aim of cleaning up a squalid defecation ground, is a real impact made on the health situation." (Pacey, 1978, 169.)

Health education has, in the past, often been seen in terms of overcoming in each individual to which it is directed the effect of his or her social environment with its traditional attitudes, taboos, and prejudices. A different approach is possible, however, one which uses social pressures rather than running counter to them. Small communities can take collective decisions to change the norms of behaviour among their members. This is clear in tightly-organised communities such as the Israeli kibbutz or the Chinese work team or brigade.

But it is also true of many other kinds of communities which have a degree of internal cohesion, for instance African communities which retain elements of a tribal social structure. A village decision may prohibit the keeping of pigs, or insist that goats are kept in pens. Thus, in many cases, all that is required is an extension of an existing practice.

How is the community commitment to change to be achieved in the light of the above discussion of the reasons why people may change? We can conceptualise the need as being to:

1. Build up, in consultation in the community, a detailed knowledge of the ways in which customary behaviour needs to be changed in the areas of water use, hygiene, and sanitation, by bringing together the expert's knowledge of the potential routes of disease transmission, with local people's knowledge of local circumstances and behavioural habits.

2. Spread, throughout the community, the knowledge that has been built up, i.e. improve the general understanding of the relevant processes of disease transmission and the ways it could be reduced.

3. Increase each community member's motivation to reduce disease transmission in the ways suggested by the discussion and pooling of knowledge (item 1 above), using authoritative assurances from respected figures; adoption by whole groups of people by agreement; even sanctions against non-adopters; informal or formal sanctions imposed by the community (when in the interest of the health of the whole community).

4. Facilitate changes in practice in any way feasible (e.g. by the provision of materials).

The major assumptions involved in this conceptualisation are that it is feasible to achieve an improved understanding of disease transmission (the routes, if not the processes involved) in a largely unschooled population, and that improved understanding will motivate more effective changes in behaviour than are likely to be achieved from recommendations or precepts not supported by improved understanding. It is possible that,

for some communities at least, these assumptions are misconceived or overstated. However, if the population is to be involved in making a conscious decision to adopt new practices, a genuine involvement seems to require that the reasons for the decision are understood. Otherwise the changes may be seen as externally imposed:

> "I must mention an amusing thing a man told me in Panama. The Rockefeller Institute has installed a sanitary-pit near every house.
> Inspectors see that these are kept clean for the sake of public health, and the neglect of these expensive installations is sometimes punished with a fine. 'Senor', this Panamanian told me, 'since the gringos have invaded our happy shores, liberty has ceased to exist, for even the doing of our necessity has been put under control !'."
> (Tschiffely, 1933, 271.)

The first step (the building-up of knowledge, in consultation with the community) might in a very small community be approached through open meetings in which all community members are invited to take part. Otherwise, it will be necessary to begin with a small group, formal or informal, which might be the same as the committee responsible for the construction or management of the new facilities. To this group the extension agent will bring expert knowledge on the transmission of the relevant diseases, in the main those which are faecally transmitted (see Checklist No. 3). The group will then discuss the local practices in relation to these routes of disease transmission, and develop ideas on necessary changes in behaviour and how to bring them about. The possibility of relatively small changes in practices should be discussed since "while the goal of sanitary latrines and the use of shoes may have to wait for many, many years in the rural areas, behavioural control measures which are cheap, feasible, and acceptable offer a change of some relief and benefit in the

immediate future" (Kochar, 1978, 184, referring to West Bengal). A similar conclusion was reached by the Jamkhed project leaders (the Drs. Arole) and the villagers of Bhavi, Maharashtra (also in India). Here, instead of building latrines, an intermediate system has been adopted: two shallow trenches have been dug just outside the village. They are renewed at frequent intervals and the contents sold as fertiliser.

Some of the problems of such an approach are widespread reluctance to: (1) accept what appear to be second class solutions even when the preferred solution is unacceptably expensive for a majority of people, (2) discuss practices related to sanitation in detail because it is undignified, and (3) discuss village practices in the light of knowledge of disease transmission, rather than simply in relation to the almost "traditional" precepts of health education. Very often, what is recommended at village level by health workers, environmental sanitation officers etc. is the same as what is recommended in textbooks written more than 20 years ago. It does not take into account recent advances in knowledge of disease transmission, nor the specific characteristics of different regions or different villages with their different topography, rainfall, settlement pattern, existing practices, and the ability of the population to afford the solutions proffered.

For these reasons, the extension agent must be trained in a way which recognises these barriers and helps him (her) to overcome them, tactfully introducing to the villagers the ideas which they may be reluctant to discuss. An appropriate composition of the group formed to discuss them is also important. It should not, for instance, be so senior and formal that it cannot discuss relevant details without loss of dignity. It will probably be best to include a schoolteacher or similar person of formal education, but also to include persons from less

advantaged sections of the population and women. If it is drawn only from an upper stratum, it may tend to condemn rather than to understand the behaviour of the poorer classes.

Once sufficient discussion has taken place concerning the desirable changes in practice, it may be possible for a formal decision to be taken at an open meeting recommending that these practices be adopted by everyone. A campaign might then be launched in which the extension agent and members of the group collaborating with him might (say in groups of two or three persons) visit individual houses to encourage the adoption of change.
This will be useful as a way of finding out what doubts and difficulties act as constraints on adoption; it will also be an informal way of bringing some mild pressure to bear - but for this very reason it is important that it should not be done in such a way as to cause resentment. In any case, the means by which community pressure is brought to bear on community members will differ; and they can be expected to operate only in communities which are relatively homogeneous ethnically and economically. An example of a community where social controls ensured majority use of latrines is that of Yalcuc, an Indian community in Chiapas, Mexico (Miller and Cone, 1979, 104-5).

An occasion and opportunity for a community decision to change its health-related practices will be provided by the introduction of a new water system or other new facilities: this is one reason why it is important to ensure that the timing of the community education programme coincides with the introduction of facilities. Further facilitation, in the form of the provision of latrine slabs or cement may be effective. Finally, however, it must be noted that in some countries a more equal distribution of national income is indispensable before communities can be expected to make a collective commitment to changes in behaviour. In Ethiopia in 1970, for instance, people felt "too poor to spend money, urgently needed for food, on

soap, latrine construction, or on water fees required by a piped system of safe water. They hesitate to wash their ragged clothing (with cold river water) for fear that the rubbing will reduce the life of the cloth." (Messing, 1970.)

In some countries where a mobilisation of the population for a variety of national purposes has already been carried out (usually by a revolutionary movement, as in Cuba, Nicaragua, or Mozambique), full use can be made of these structures in campaigns to change health practices.
In Nicaragua, for instance, the mass organisation of supporters of the revolutionary government, the Comités de Defensa Sandinista, designates one committee member as responsible for health in each block, coordinating with a counterpart in each larger neighbourhood committee. The population can be effectively mobilised for health campaigns or "days of action" (Nicaragua, n.d.). The effectiveness of this kind of structure appears to depend on the high level of national solidarity and the identification between government and mass movement found in the post-revolutionary situation, and it may be difficult to create in a more settled political climate.

CHECKLIST NO. 3

Disease transmission

The extension worker should bring to the group a knowledge that:

1. Of the diseases for which water supply or purification might play some role in reducing incidence, it is the faecal-oral category (diseases transmitted by any faecal-oral route) which is of overwhelming importance in the tropics as a whole (together with schistosomiasis; locally, guinea worm might be important in a particular community).

2. The faecal-oral category of disease accounts, in all the poor and relatively poor communities of the world, for a very high proportion or infant and child mortality; recent evidence suggests an even greater role for it in triggering off the spiral and worsening nutritional status and infection than was previously realised.

3. Faecal-oral transmission routes are multiple, and only sometimes involve contamination of water prior to the point of collection. In the context of a water project which will take care of any such contamination, primary attention must be paid to preventive interventions in those faecal-oral transmission routes which do not involve contamination of water prior to the point of collection.

4. The number of possible routes is almost infinite, and many are in practice impossible to investigate with any precision; but the attack can be to some degree pinpointed trough the exercise of logic and simple local knowledge. The logic reminds the investigator that the multiplicity of routes all lead from A to B – from defecation to ingestion – which implies that an attack concentrated around these two points has a prospect of success in cutting off a large proportion of the transmission; the limiting factor will be the difficulty of this attack – of changing behaviour in these areas – rather than be imprecision of the task.

5. The local knowledge, primarily of the details of habitual behaviour, can be brought to bear by local people; but delicacy is involved in encouraging frank discussion.

6. At the point of origin of the faecal-oral transmission routes, the specific matters to consider will probably include:

a. will the faeces themselves, in the place they are deposited, possibly start a cycle of infection through:

i) being directly exposed to other persons or to domestic animals (rather than in a latrine hole, covered, or at good distance from houses, etc.)

ii) being exposed to flies (inadequately covered latrine or as bove)

iii) being moved or transported (either in the case of systems of disposal of nightsoil, or the way young children's faeces are disposed)

iv) being washed during rains or floods by water which finds its way to ponds, wells, streams, etc. (but this is the one major route which, as far as drinking is concerned, should be taken care of by water purification)

v) being washed as above or by irrigation water – water which is waded or bathed in (danger of schistosomiasis)

b. will soiled latrines (or potties) themselves possibly be the origin of a chain of infection?

c. what about objects (paper, leaves, corncobs, etc.) used for personal cleansing?

d. is personal cleansing effectively done? Is the situation frequent that the necessary paper, etc. or water is not available?

e. is the washing of the hand(s) after defeacation habitual? Is it thorough, with soap? (It seems conceivable that this is as important as the use of a latrine, but it is far less often mentioned. In some countries, it is even difficult for villagers to obtain soap).

f. what about the disposal of the excreta of babies? If on the ground, is the clearing up thorough? May it leave particles on gound or brushes? If babies' clothes are soiled, how are they washed, where is water thrown?

7. At the end point of the faecal-oral transmission routes, the specific considerations will probably include the following:

a. is the washing of hands before preparation of food thorough, with soap?

b. is there adequate cleaning of receptacles (plates, dishes, cups etc.) used in preparation and eating of food?

c. are hands washed before eating? Again, is it thorough, with soap?

d. do people put fingers into water containers and cups when taking water?

e. is food protected from flies? (And are flies more abundant than they need be, in the sense that breeding grounds which could be eliminated are left?).

VII. SELF-RELIANCE

There is a large gap between rhetoric and practice in community participation, which centres on the notion of self-reliance. Advocacy of participation in the abstract often stresses the desirability of communities doing things for themselves, organising themselves, or controlling the process of development for themselves, while the practice remains overwhelmingly a matter of what has been described in the earlier parts of this monograph: programmes centrally coordinated by government agencies, but with some degree of community participation in their adaptation to local circumstances and in their implementation.

What are the constraints to self-reliance? How far should an agency attempt to pursue it, in different circumstances? It is an unattainable chimera, or a diversion which will delay people getting what they need and want: water and the conditions for better health?

One of the problems is a lack of clarity in the definition of terms. "Self-reliance" is sometimes used almost interchangeably with "participation", but here we take the concept to refer to a greater degree of independence on the part of the community. However, dependence takes various forms and therefore communities can be independent, or self-reliant, in various different respects. Three will be considered here, because they distinguish very different types of project: self-reliance in ideas and initiatives ("endogenous development"), self-reliance in funding and control ("autonomy"); and self-reliance in materials and manpower ("self-sufficiency").

ENDOGENOUS DEVELOPMENT

One of the characteristics of the goal of "Another Development" as elaborated in the 1975 Dag Hammerskjöld Report was that it should be endogenous.

This was defined as "stemming from the heart of each society, which defines in sovereignty its values and the vision of its future." (Sterky, 1978, 4.) The concept that it should be the local people themselves who decide what they want, and should be supported in their efforts to achieve it, is at the centre of much of the ideological writing about community participation, and it goes beyond consultations about, say, the form which a water project should take.

There is a certain contradiction in the very notion of external stimulation or government support for self-reliant local initiatives. There seems no point, for instance, in trying to establish by research what are the conditions under which local communities spontaneously undertake their own development projects, since to seek to replicate the conditions elsewhere would be a form of external intervention.
On the other hand, there is clearly an appealing argument that a local community is in the best position to know what new development it needs, or that needs are subjective anyway and that they should be able to have what they want rather than what outsiders think they should want. This argument is reinforced by the experiences with attempts to impose family planning, in particular.

One way in which some governments - the Republic of Korea, Indonesia, Thailand - have allowed local communities to decide what they want has been a programme under which funds are granted to each local community to use for whatever development purpose (or even any other purpose) it sees fit.

Several questions may be raised, however. How important are the choices left to the villages, in comparison with the choices retained by government, in setting the general parameters for village choice and in selection and control of village leaders? How large are the funds provided under these conditions, in comparison with those collected from the same communities as taxes? How far can it be said that the local people, as distinct from leaders or dominant groups, are involved in decision-making? In South Korea at least, the programme developed into a more regular form of government financing of local projects (Sung Hwan Ban, 1977). Does it not then bear a close resemblance to conventional programmes of government support for local council projects?

Perhaps the local council areas are usually larger, and the voice of administrative officials usually greater in the allocation of funds, but these are relative matters and it does not seem justifiable to regard these programmes as exceptional examples of "endogenous development".

The ideals of the community development movement have for a long time emphasized the themes that local people should themselves decide what they want and be supported in efforts to achieve it.

Community development may be said to be predicated on the idea that many people are unable to participate in shaping the life of their nations, their communities, and indeed their own lives, not so much because of social structures which exclude them, or economic structures which give them too little opportunity, but because they do not know how, they have deep-seated attitudes which stand in the way, they lack self-confidence, are apathetic, and distrust government. These problems are to be solved by an educational process in which a change agent gets to know a community well, helps the community identify its problems, instils confidence and overcomes apathy, and helps the community organise itself to fulfil its identified needs. Government help is provided, and so distrust of

government is overcome. In the process, the other attitudes which hinder the harmonious pursuit of development are changed also.

This idea may have more applicability in some areas of the developing world than in others. In many African countries, such an approach to community education may make more sense than in Latin America or most parts of Asia: simple lack of knowledge may be more of a constraint on development, while communities are not so much affected by class divisions. However, even in Africa, the community development movement and its near equivalent in the Francophone countries, animation rurale, have had a very minor impact.
This is sometimes attributed to the unwillingness of governments to allow real power to pass from their own hands at the centre into the hands of local communities (Charlick, 1980). However, a more fundamental reason may be that the technique is founded on unrealistic assumptions and cannot make much headway in fostering community solidarity and cooperation in the face of socio-economic systems based on motives of individual advancement (Erasmus, 1968).

In practice, community development departments have become minor agencies used by government for specific development purposes, chosen more by government than by villagers. However, the personnel of these agencies have built up considerable expertise in carrying out dialogue with local communities, and might well be used in any attempt to base development on what communities want.

A voluntary agency operating in a limited geographical area may be in a very good position to build up a knowledge of the needs and wishes of various sections of the local population, and to implement a development policy which is based on local decisions. But where does the ideal of allowing each community to decide what it wants leave government agencies with a

responsibility to cover a specific need such as water and sanitation?

It is sometimes suggested that communities be asked to rank their needs or to say what their greatest priorities are. However, such a procedure ignores that a community's needs, like an individual's, are usually partially met, rather than completely unmet or fully satisfied. It is not reasonable to ask a person whether he needs food, or health care, or water, or a source of income. Similarly, a community's answer to a parallel question must be based mainly on the community's understanding of what it is likely to get help with, from those asking the question.

Also, the calls for community initiative often ignore the fact that different sections of the local community may have different interests. In fact, a government which, while presiding over a mixed economy, wishes to protect the interests of the poor, may well do so more effectively by ensuring that the development projects undertaken are of the type which benefits the poor, rather than be leaving the initiative to local community bodies which may be dominated by the locally better-off.

At the same time, as has already been mentioned, if the call for community initiative is interpreted by a water or sanitation agency to mean that it should adopt a policy of awaiting community requests for assistance, and assigning priority to those communities which make their requests earlier, more strongly, or with a larger community contribution, there is a danger of favouring the same communities which are favoured in every other respect.

It appears, then, that a sectoral agency cannot operate a policy based on community initiative, while a government initiative based on a measurement of objective need in a given sector seems fully justified.

AUTONOMOUS COMMUNITY PROJECTS

A second emphasis in much of the writing on community participation is that the community should be in control of the process. But this is argued in two rather different senses: on the one hand, that government agencies should voluntarily hand over most of the decision-making power over projects which they support to the community representatives (Hollnsteiner, 1977; cf. also Arnstein, 1970). This may be extended to the idea that higher-level committees of community representatives should be created at district or even national level to decide upon the policies of the agencies. On the other hand, it is argued by some that the only genuine community-based development takes place when the community is entirely autonomous, not relying on government funding or support for its projects.

The first of these suggestions derives largely from the experience of developed countries and the controversies over "planners versus people" which have arisen there. It has also been influenced by the special case of planning for national minorities, such as the Indians in Canada and the United States (Vindasius, 1974). To make the same suggestion for developing countries in general appears to ignore the fact that, in many of these, local power is exercised primarily in the interest of those who hold it: there are few constraints against its being used for personal or sectional advantage. It may be, in many countries, that more can be achieved for the majority of the population by agencies which are sensitive to the needs of the majority of the population, and engage in extensive consulation with the population, but which retain some degree of control. In any case, this is much more likely to happen in practice in most countries, and it can be regarded as an earlier stage which is more immediately attainable.

The argument for community autonomy in the sense that a community would organise and find the funds for its own projects

rests on the idea that in this way dependence on outsiders would be removed.
Dependence is seen as offering opportunities for exploitation, and an autonomous community is seen as being one which can defend itself against such possibilities.

However, there may continue to be a form of dependence - on the outsiders who provide the expertise. In various places community health insurance schemes have been established, under which medical services are provided by a doctor and paid for entirely by the community. They remain, however, traditional medical services, dependent on the doctors. There is less experimentation with the training of community members to carry out health tasks than there is in many programmes controlled by outsiders to the community - voluntary agencies or government (e.g. case of Piura, Peru, in Muller, 1979). The problem is that community members do not have the technical knowledge required: so long as this knowledge remains exclusively with outside experts, even a community which is in full political and financial control of its own affairs, and self-consciously independent in its stance toward the outside world, cannot avoid this form of dependence.

A national policy of community autonomy (on, for instance, the model of the Yugoslav self-management system or the Chinese rural organisation with its brigades and work teams) may be able to overcome some of these problems. In Yugoslavia, the socio-economic system can be briefly described as one in which each enterprise consists of a number of basic units of freely associating workers, the units also being tied together by freely made agreements; at the commune level of local administration, the enterprises enter into local agreements with, for instance, the health workers as another work collective, to provide health services for the area. (Rusinow, 1975; Ekonomski Institut Zagreb, 1977). The constitutional principle is the free exchange of labour. The Chinese rural

system of organisation has many similarities with this, the work team ("production team" of 20-60 neighbouring peasant households) being the unit which owns the land and shares the work and proceeds, with the brigade (usually a large village or a group of hamlets) being in effect an association of work teams, responsible for health services through a local insurance system of "cooperative medicine" provided by the "barefoot doctors"; brigades are responsible also for primary schools and for most small industry and repair shops in the villages. (Unger 1974, 35d, 98-9)

Such systems of community organisation can tackle the problem of dependence on experts through national control of education and training: if necessary, through the training of community members themselves, as in the case of the "barefoot doctors" of China. A national framework can be established to ensure the greatest possible harmony between the interests of each small collective or autonomous unit, and the interests of the wider national community. Among the other problems to be overcome are the fact that the different resource endowment and initial stage of development of different units are likely to lead to a tendency to a widening income gap between units and regions; and the possibility that collective units (cooperatives which own their means of production), particularly the better-off ones, will be reluctant to admit new members, with the result of a growing gap also between those with membership rights and those who are excluded.

In the Yugoslav model, the self-managing economic organisations (factories etc.) of a local government area (commune) form a committee which finances services, including water and sanitation, for the commune. This is a type of community participation on an extensive scale, but not one which is transferable to other countries without the adoption of the self-management approach in the economy as a whole.

APPROACHES TO SELF-SUFFICIENCY

The final sense in which the word "self-reliance" is used is as "maximum self-sufficiency": that the community should use its own manpower and materials as far as possible to meet its needs in each respect, rather than either receiving them as help from elsewhere, or buying them after collecting funds.

A typical example is the Chinese policy of encouraging the use, particularly by "barefoot doctors", of indigenous herbal remedies, and the growing of herbs by each brigade or work team for its own medicinal use. The advantages are clearly illustrated by the example: most important is the fact that a self-sufficient solution is generally a cheap one. It may even be possible to organise the work involved at a slack season and turn it into an interesting or festive activity, so that it is not felt as onerous, and that in effect there is no cost at all. Secondly, it makes use of indigenous knowledge. This may sometimes be desirable in order to preserve useful skills which might otherwise be lost, and sometimes because the indigenous method is superior for some purposes (herbal remedies have proved more effective for some conditions, alone or in combination with Western treatments). In all cases, it attaches a positive value to knowledge and skills possessed in the community, enhancing the self-respect of community members. Self-reliance in this sense may also be considered to have value as a form of defence against the possibility of disruption caused by war or other disaster; finally, it may be said simply to put less burden on the national economy, including the transport system.
In an economy in which labour is plentiful while capital is scarce, self-sufficient solutions combine the most labour with the least capital.

Self-sufficiency can hardly be absolute, however: no-one advocates even complete national autarky (a state policy of

filling all national needs through domestic production, doing away with the need for imports), let alone that there should be no trade between local communities. The point, rather, is to find the optimum point to which self-sufficiency can be carried, for each size of place and in respect of each of its needs. It is possible to envisage, for instance, a national plan which maximises the extent to which each region, each district, each municipality, and finally each village provides for its own needs. But each specific need must be examined separately: medicinal herbs will provide, say, febrifuges, but not, perhaps, an agent to prevent whooping cough or polio: vaccines are required, and these may best be produced at a national or even international level. A policy of optimal self-sufficiency will look at each need, as a whole and in each highly specific detail, for ways in which it can be met at the more local level. It will examine the function which needs to be fulfilled in each case, rather than assuming that a certain item needs to be made or type of service provided in order to satisfy the need: i.e. it will look for local substitutes for goods or services which as such cannot be provided from local resources; thus there is a close connection with intermediate technology.

Having found more self-sufficient solutions in principle, and having decided that the advantages outweigh the disadvantages, it is next necessary to organise their implementation. One of the problems of the movement for intermediate technology has been that its proponents have been less interested in this social aspect. The incentive is often lacking.
In the water and sanitation field also, the motivation at many levels may be to use the more "modern" solution which brings greater prestige to all those connected with it. These pressures appear to exist in particular at the middle levels, whereas top policy-makers may be more aware of the virtues of simpler technology, and the ordinary people may be satisfied with it also. It follows from this observation that it may be

necessary in hierachical organisations, such as national water agencies, to lay down from the top guidelines on the use of appropriate technologies and on maximum use of local resources, as well as to give play to the search for such solutions in consultation with communities. At the same time, in campaigns for mass action or for autonomous community projects, the recommendations made or the models held up as examples can be those in which self-sufficient approaches were adopted. This was long the case, for instance, with the model Tachai brigade in China (Wen Yin and Liang Hua, 1977).

THE NATION IS A COMMUNITY TOO

Self-reliance is a problematic concept, not a simple ideal. It cannot be expected that once a community has embarked on an autonomous path of development, perhaps after freeing itself from oppression by local landowners or exploiters, it will be oriented to making maximum use of indigenous technical knowledge, manpower and resources. It might be said, in fact, that the use of indigenous resources for relatively self-sufficient development requires the stimulation and encouragement of government or other external agencies which hold and emphasise such ideas of self-reliance.

There is normally, even inevitably, some form of dependence of the local community on the wider national community: it is unrealistic to call for an ideal form of community participation which would be at the same time endogenous (self-generating), fully community-controlled (self-determinant), and maximising the self-sufficient use of local resources. A more realistic policy recognises the reality that the relationship between an external agency pursuing a development project in a community, and that community, is one of negotiated collaboration: often each side would wish the other to make a bigger contribution, in effort or resources, while limiting its own. When this is recognised it is possible to plan an approach

which provides for an appropriate level and type of community participation and of contribution from the external agency. By "appropriate" is meant one which is technically feasible and which takes into account both the interests of the particular local community and those of the people of the country as a whole. It does not over-subsidise some communities at the expense of the rate at which others can be brought into the programme. But it does not expect total self-reliance in one sphere, such as water and sanitation, without the framework of national socio-economic structures which would make self-reliance possible in many spheres.

VIII. TYPES OF COMMUNITY

Differences between communities have been mentioned in the previous chapters wherever they have been particularly relevant to the approaches and methods of community participation discussed.

This chapter, however, will discriminate between types of community in a more systematic way. The differences are of great importance in choosing appropriate forms of participation as well as in presenting them to the communities. This chapter will assume, by and large, that the national socio-economic system is of a capitalist or mixed* type, and that community participation is to be fostered by an agency external to the community; generally, the context will be that of a government agency responsible for water supply.

THE RURAL-URBAN CONTINUUM

Clearly, size is one of the most important characteristics distinguishing types of community: within any country, it is likely to be the most important. It must be emphasized that it is a continuum rather than a dichotomy: there are not just two types of community, "rural" and "urban", but always a continuous range in terms of size.

The danger which must be avoided is that of setting up just two organisational approaches to the provision of water and sanitation, one for "urban" and the other for "rural" communities. If there is not sufficient flexibility, this may lead to some types of community being excluded in practice from any provision, as each agency concentrates on communities of a certain size for which its techniques and methods are appropriate. In some cases, "rural" water supply agencies set up with partici-

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* i.e. there may be state or collective enterprises but the majority of the farming population works on individual or private farms.

patory aims and approaches have been diverted to a large extent to the provision of supplies to those small or medium-sized towns not covered by the "urban" water agency - and have been unable to use the participatory approaches with which they are familiar because these towns are too large for their use.

In an urban community, there is generally less occasion to use communal or voluntary labour. In urban areas, underemployment will be relieved by employing paid labour on public works including water and sewerage, whereas in rural areas the situation is often different, in that all members of the community have access to land for cultivation, and underemployment is largely a matter of having little or nothing to do on the land at certain times of year, while there are at other times of year periods when agriculture requires the full effort of all available labour. In such rural areas, it will in most seasons be convenient for cultivators to take some days off farm work to perform communal labour on water installations.

In this case, it is not the size of the community as such but the question whether the predominant activity is agriculture that is crucial. This is an important question in many other respects also, and one which has implications for the use of the terms "rural" and "urban" themselves. In some countries, particularly in Latin America, the word "urban" is used to refer to places which are municipal headquarters even if they have a population of less than 2,000. To overcome the confusion caused by the difference between this usage and that of other areas where services to much larger places are still referred to as "rural", the word "rurban" has been suggested for these small towns and large villages, but it is not widely used. In the present monograph, the word "urban" is reserved for cities and substantial towns where the majority of the population is not engaged in agriculture, while the word "rural" is used to cover villages as well as the dispersed population.

A number of other characteristics are related to the rural-urban continuum in the sense that more "urban-type" communities, those which are larger and rely less on agriculture as an occupation, usually differ from rural communities in these characteristics, though not always. Some communities are more fully integrated into the national market economy (more "commercialized") whereas others are more isolated, less involved in commercial exchange with the outside; in some, the population itself is more mobile, in others more settled. These are all characteristics which have a clear bearing on the sense of separate identity and solidarity of a community. A "community" in the full social sense of the term is not just a locality where people live but is defined by a dense network of social relationships between its members, contrasting with relatively few relationships extending outside the community. Since the number of relationships is bound to be heavily influenced by the ease of physical communication, the sense of community tends to be very strong on islands and in relatively isolated places, and weak in urban neighbourhoods. Particularly relevant to externally-induced efforts to promote community participation is the fact that the real community is generally the geographically separate settlement (nucleated village or town), and not an administrative area including more than one village. The only important exceptions are the cases where outlying hamlets are regarded as part of a parent village community, and where dispersed homesteads are grouped into named communities.

There is another important difference between a small village and a larger one, which has a bearing on the sense of community. In a settled community (little migration) of up to about 500 or 600 population, all community members will be known to one another and almost all contacts will be on a personal basis; but above that figure this is no longer true and there is more likely to be an impersonal relationship, for instance, between village leaders or representatives and at least some of the community members. Since smaller villages are also more likely to be homogeneous, with everyone on a similar social

level, this implies that cooperation may usually be easier to organise in smaller communities. It follows that campaigns for mass action, or to mobilise the community behind changes in individual health-related behaviour, or efforts to achieve the self-reliant solutions to problems of water and sanitation, should normally be attempted first in the more rural, smaller, more isolated and settled communities. These are often the last to be touched by government programmes.

Other types of difference may act in other ways to override this first generalisation, however. An urban sub-community, for instance a squatter settlement, may be highly organised to demand public services, showing a considerable degree of solidarity. This is in part a matter of the expectation that urban areas should be provided with these services, including water, and the realistic expectation that pressure on the authorities might lead to their provision; together with the greater awareness of political and other rights in general among a better-educated urban population. This kind of solidarity is characteristic of some urban squatter or slum communities and not others. A necessary condition is that there is some strongly felt need for a service or environmental improvement (or to resist eviction), and that it is felt throughout the community. Another may be the presence among the inhabitants of a proportion of active persons, often better educated and relatively better-off. This in turn may be a function of the difficulty for such persons of obtaining other types of housing, i.e. such factors as high land prices in the peri-urban belt (White, 1975, 10). Where a squatter settlement is formed by gradual accretion of poor families building their own shanties, there is less likelihood of organisation than when formed by concerted invasion. Whatever the reasons why united community organisations exist in some deprived urban communities and not others, it will generally be possible for water or sewerage agencies to collaborate with such organisations or committees in the bringing of services to their

communities: from consultation on planning to communal labour in installation if this is required. However, there can be no expectation, in general, that an urban neighbourhood committee will enjoy sufficient general confidence among the community to deal with financial matters such as the collection of water rates. There are generally few, if any, sanctions which such a committee can bring to bear on individual householders and, because such urban communities consist of people who are strangers and have little information about one another, there is likely to be widespread suspicion of the probity of committee members handling funds (Roberts, 1973)*.
The training of a community member for operation and maintenance is likely in the urban situation to be regarded by other residents as simply the employment of that person, not a community concern.

Apart from squatter communities, city areas are usually regarded by their inhabitants simply as localities of residence, and there is little community solidarity. There are some exceptions, particularly in older parts of older cities, where strong local identity may follow ward (barrio) lines, or there may be ethnic quarters. In such cases, ward associations may be effective in hygiene campaigns or the like. However, cooperation over such matters as the maintenance of latrines is, in urban areas, usually found only among smaller groups of households.

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* "... A similar process occurred over a project to replace the water pipe that provided the San Lorenzo water supply. The existing pipe did not supply sufficient water and furthermore, it was corroding away in places. The local mayor encouraged the betterment committee to organize the neighbourhood to provide funds for the purchase of bigger tubing. To avoid imputations of misappropriating funds, he was careful to insist that the committee give receipts for the money collected, and keep full accounts of purchases. However, the collection procedures only served to arouse further mistrust of the committee's motives. Neighbours became aware of a complicated collection procedure and assumed that large sums were being collected..." (Roberts, 1973, 232-3). "San Lorenzo" (a fictional name) is a squatter settlement in Guatemala City.

Examples are the "comfort stations" (toilet and washing facilities) built for compounds of related families in Ibadan, Nigeria (Adeniyi, 1973), and the aquaprivies installed on the basis of one latrine for each hutment or quadrangle, consisting of about five unrelated families, in Calcutta (Maitra, 1978, 145-6).

INTERNAL DIFFERENTIATION IN RURAL COMMUNITIES

As for rural communities, the degree of cohesiveness and solidarity is also a matter of factors other than those mentioned above: size, commercialisation etc. There is, in the first place, the vital question of homogeneity-heterogeneity and economic differentiation. Cohesiveness can generally be expected to be greater in communities comprising a single ethnic group, not divided by caste.

Where a community is divided by ethnic group or by caste, it may well constitute two or more separate "real" communities in the sense of common identity and especially of a feeling of common interest. Whereas willing cooperation may be achieved for common purposes within each of these, any cooperation between them will probably, if it is to be voluntary, have to be based on a clear calculation of advantage made separately by each group.

Cohesiveness can also be expected to be greater where there are no real class divisions either: no division, for instance, between landowners and landless labourers, or between a few large landowners and a majority of smallholders. This means, in effect, that many whole countries consist mainly of rural communities where little cohesiveness can be expected, because they are divided by class and perhaps in other ways too. It does not mean that no forms of community participation can be adopted there, but it does limit the scope of the forms requiring deeper involvement. As in cities, even communal labour

will be inappropriate where some are landless or very poor: paid work or food-for-work is a more suitable alternative.

It may be possible to be somewhat more specific about the effect of different types of class division, though such generalisations are hazardous and individual cases will vary. We may first take the extreme case of the latifundium, or large estate in which the community constitutes the workers on the estate. Here, communal improvements depend on the owners of the estate - or on land reform - and no real community participation is possible (White, 1973, 137-8). On the other hand, communities consisting predominantly of workers on estates or plantations may show a considerable degree of internal solidarity (Jayawardena, 1963), and if independent organisation is possible for them outside the control of the estate they may carry community organisation very far in the direction of self-reliance. Thus, Philippine communities have, at the instance of voluntary agencies, adopted highly self-sufficient solutions to problems of sanitation and health (Galvez Tan, 1978; cf. Flavier, 1970, 133-156): these are largely homogeneous communities of poor people, the landowners not being resident among them. The situation which is most common (among non-socialist developing countries), and has been assumed in much of the present monograph, is one where landowners, traders and other better-off people are resident in the same communities as poorer people, and tend to dominate their economic and political life. The smaller the community, in general, the smaller the differences are (there is less scope for earning large incomes): this is another important reason why co-operation is more likely in smaller communities. However, even in villages of intermediate size the wealth and income differences may be high, and the distribution is typically skewed (lognormal) in such a way that a few individual households have wealth and income several times that of the median or especially the modal household. It is common for outsiders to fail to recognise these differences and appreciate their

implications: they may assume, for instance, that where "traditional" land tenure prevails all families have equal access to land and other means of production, whereas this is often far from being the case.

One of the most pertinent implications of these income differences has already been mentioned: namely, that a water rate which constitutes an acceptable proportion of income for the better-off community members will be unacceptably high for the poorer. More generally, the better-off community members who usually control community affairs tend to interpret communal improvement in ways which primarily benefit them (roads which will make it easier for them to sell their surplus produce, secondary schools etc.). It is a widespread phenomenon, also, that externally-sponsored cooperative societies function as a way in which the better-off minority can obtain cheap credit, thus gaining an additional advantage over poorer farmers dependent on moneylenders - "out of the 51 million farmers in India only 11.4 million could get credit facilities from the cooperatives leaving 80 per cent of them to seek credit from other sources... benefits have gone more to the big farmers" (Agricultural Finance Corporation, 1974, 2). This is largely a matter of the big farmers' local control over the cooperatives, and their monopolisation of the credit available through them, though the small farmers are also signed up as members*. There are also widespread problems of wilful default among cooperative borrowers who have sufficient influence to avoid payment.

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* For instance, in one block which may be typical, only 13.6% of cooperative society members had outstanding loan accounts at a date in 1978, absorbing the lending capacity of the societies. (Agricultural Finance Corporation, 1979, 16).

It is natural, then, that when the poorer community members' experience of communal projects is one of being pressed to contribute equally (i.e. a much higher contribution in proportion to their income) to projects of little benefit to them, and/or when their experience of cooperation is of a cooperative society which, similarly, has not benefited them, their response is one of apathy, when suggestions are made for a communal, cooperative approach to water or sanitation improvements (Huizer, 1979). It is essential for the external agency to ensure that the poorer sections will benefit, and this may mean retaining some control rather than putting it in the hands of the community - i.e. of those with most influence in the community. It is also essential that the poorer sections should appreciate and be convinced that they will, in this case, benefit. Clearly, there is a potential for tension between an external agency committed to these goals and those who find their power and influence in their communities under challenge. The best solution may be for the agency to avoid open confrontation, taking advantage of a general public commitment to ensuring that benefits reach poorer sections - which almost always exists at the level of formal policy and rhetoric - to suggest means to achieve this.

The problem of inequity which may arise where established community authorities or leaders take charge of new projects, using them to their own advantage or that of one section of the community, has long been recognised. It cannot be said, however, that the complexities of the problem have been taken adequately into account in much of the literature on community participation. It sometimes appears to be assumed, for instance, that the problem is solved if community committees are democratically chosen, with representatives of all groups including the poor and women. In reality, however, even committees which upon the recommendation of outsiders include such representatives do not necessarily act to defend the majority interest against that of powerful minorities. The reason is

simple: dominant groups, with economic or other power, are in a position to take retaliatory action against those who challenge them.

Therefore, if an external agency is to intervene in this situation, it must do so with tact and understanding. This is illustrated by one of the most sensitive early analyses of a process of attempted stimulation of community participation, at Chonin in Brazil. It amounted to an attempt to alter the general balance of power in the community, though the project leaders did not fully appreciate this or foresee the friction which was bound to arise between the project and locally dominant groups. The project took place in 1951-3, and is described by Oberg and Rios:

"The Community Council was intended by the program planners as a device for involving the community in a program for improving their own welfare. Too often in the past, they reasoned, similar programs had produced no real or lasting benefits because the local population had simply been the passive recipient of action initiated and carried through by outsiders. The Chonin Community Council was intended as a broadly representative nonpolitical body wherein every segment of the community could make its voice heard and express its wishes to agency personnel. In open discussions it was to arrive at decisions that would reflect the views of the community as a whole, thus serving as a sounding-board to the services. In addition, it was to carry out, through the operation of its special committees, specific welfare tasks in the community ... It was composed of landowners and the landless, leaders and rank-and-file, men and women, political "ins" and "outs"." (Oberg and Rios, 1955,95, 364-5.)

However, the project collapsed in this community amid mutual recriminations between the project coordinator and local leaders. The authors explain that "In the Community Council,

local officials found themselves in a position where a coalition of three forces - those out of power, the normally disenfranchised, and the project coordinator - were given an instrument to undercut their authority."(Ibid., 370)

Following the collapse at Chonin, the project was transferred to another community, Pedro Leopoldo; the authors comment favourably on the different approach which was adopted there: "The most fundamental lesson learned during the Chonin project was the decisive role of political involvement and local organisation. There is no local coordinator for the Pedro Leopoldo project, and there is no community council. Coordination is effected by an official in the state capital, insulated from direct involvement in local political intrigue. In place of the community council, the service agencies work directly through the established local authorities and other local leaders. Projects requiring both money and labour from the community as a whole have been successfully carried out through the cooperation of local authorities of the party in power." (Ibid., 373.)

Not everyone would agree, particularly now, 25 years after this was written, that obtaining money and labour from a community is a sufficient criterion of success, or that the democratic ideals were necessarily inappropriate to the circumstances of Chonin or similar places. It may be argued that mistakes were made in the way these ideals were pursued - mistakes in political tactics rather than strategy. The coordinator failed to avoid open confrontation in circumstances where he could not win such a confrontation. However, this case study shows clearly the nature of the dilemma.
Local differences in landholding and income, and corresponding differences in influence and power, are the usual situation which policies for community participation must take into account. If it is not possible - as it often will not be - to

ensure the "complete democratisation" of the local communities*, then a choice will often have to be made between a policy which puts control in the hands of community influentials, and one which retains agency control in the interest of weaker sections.

EGALITARIAN COMMUNITIES

However, there are also communities where the kinds of wealth and income differences discussed so far do not appear. Apart from small hamlets in many areas, they include in particular agricultural villages even of larger size in areas of the world where cultivable land is still open to any who wish to cultivate it. Thus they include shifting cultivators such as the hill peoples of Southeast Asia, as well as settled farming villages such as those of Paraguay, where land is relatively abundant. The situation prevails in particular in many parts of Africa, but by no means all. A special type of egalitarian community exists in some places where land is in relatively short supply. These communities maintain traditional land tenure and other practices which ensure that each of their members has a share of the means of production, and they oppose attempts by individuals to gain a better position than others within the community.

Such egalitarian cultural values are found, for instance, among some of the Amerindian peoples of Mexico (Erasmus, 1968, 71), and probably explain the finding at the Mazahua village of

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* "The people are simply the entire population of a community, specifically including the underprivileged and the underserved, whose rights and prerogatives have often been usurped by an exploiting class which controls political and economic power. In other words, we cannot talk in terms of 'the people' unless it is assured that there is complete democratization in the community, and that its lowest segment has access to information and a due say in the making of decisions which concern the community". (Seminar on Another Development in Health, 1977, 73).

El Nopal (Iwanska, 1971) that the villagers would not accept a water installation connected to only some houses, nor wells accessible to clusters of huts: "Mazahuas from El Nopal decided that everybody would have water at once or they would not have any water in El Nopal at all. They would continue walking to a rather poor and distant well which they had been using so far." (Quoted by Whyte and Burton, 1977, 119.). This is not a stance which is likely to be encountered in other types of community. Another characterictic of this special type of egalitarian community is that it is often exceptionally 'closed', suspicious of outsiders: this is an aspect of preserving distinct cultural values.

Thus communities with little internal differentiation will normally show the greatest propensity for community cooperation, but in some cases it may be difficult for outside agencies to gain the confidence of communities which consist of minority ethnic groups, especially those showing greater cultural differences or accorded low status by majority groups. In these cases, it is important for the agency to ensure that its own staff at all levels approach the minority group with respect and on equal terms. The point is made by Parkipuny in relation to a water project among the Masai in Tanzania: "when the fundis came to lay the pipe, the working relationship between them and the Masai was far from harmonious. Again it was clearly observable that the fundis assumed the role of superiors - representatives of a world of know-how who had come to do skilled work for a people who knew nothing, and worse, who could understand little..." Nor was this just a matter of the skilled workers employed on the project: the author finds equally prejudiced misunderstanding on the part of the surveyor and of a member of parliament who "warned the people (of the project area) against feasting tendencies and exhorted them to work harder." (Parkipuny, 1975, 37-41.)

TRADITIONAL COMMUNITY ORGANISATION

One further major distinguishing characteristic between communities requires specific focus - it has been touched upon in previous sections, e.g. in relation to the use of traditional authorities in the organisation of participation. This is the fact that some communities still have an internal (traditional) structure of political and legal authority (at least to solve small disputes), whereas others do not. Broadly, Latin America and the Caribbean are without such traditional authorities, except for some Indian communities; Africa has them; while the situation in Asian countries is more mixed. The traditional authority systems of these corporate communities may be highly authoritarian - with strong chiefs or kings - or they may be egalitarian, as in the cases just discussed.

The point to be made is that when these traditional structures of authority still command general support among the population, there is a good basis for a high degree of community participation. To a considerable degree this is true even where there are relatively great differences in wealth and income, and is an exception to what has been said about participation under those conditions being less easy to carry to the same point as among less differentiated communities.

This is, of course, because there is at least an individual or organised body which can take decisions for the community, for instance committing community members to undertake communal labour. It is unlikely that without these communal institutions there can be any question of a community decision (collective commitment) to changes in individual behaviour. Merely administrative bodies, such as local authorities, are not usually accepted as having legitimate rights to require such changes, while the traditional institutions may have this legitimacy.

However, the rulers, chiefs, headmen, councils of elders, clan or caste councils etc. exercise an authority which usually depends to a considerable degree on consent: even if in formal terms their power is supposed to be absolute, they will generally be wise to bear in mind the opinions of influential sections of the community at least. This means, for instance, that they would generally not ask the population to perform more communal labour than it can be expected to perform willingly, even if there is provision for fining absentees. (IDS Health Group, 1978, Vol.1, 221). A different situation may prevail where a chief's position rests fundamentally on government approval and not on the community.

Thus, from this point of view also, it will be important to ensure that all sections of the community will benefit from any proposed project and are convinced of the need for it.

FACTIONALISM

There is a degree of "factionalism" in almost any community, which may or may not be related to divisions of class, ethnic group, or other obvious characteristics. In multi-party systems, it is of course often related to or expressed in terms of political parties. The problem posed for community participation is that those who belong to factions or parties opposed to those in power (or those associated with the project) will often be unwilling to cooperate and thereby add to the prestige of those in power. In these circumstances, it will be necessary for the staff of the external agency to find a way of persuading factions to work together in the general interest, perhaps by the formation of a committee on which leading positions are taken by members of different factions, so that the prestige connected with implementing the project is spread among them. In a minority of cases, the problems may be impossible even for experienced staff to circumvent, and some communities may have to be omitted from programmes involving

participation until their factional disputes have subsided. It need hardly be said that problems will be exacerbated if external agencies show partiality toward one faction. e.g. that of the government party. In Lesotho, for instance, a country divided between two parties, the agency responsible for self-help rural water supplies is the Department of Community and Rural Development. The Department's officials are instructed to select Village Development Committees by consultation with "the villagers who are supporters of the Government" (quoted by Feachem et al., 1978,68). Feachem et al. comment: "Leadership, often thought to be a necessary condition for change and development, is plural and competitive, and the unanimity and cooperation necessary to carry projects through to completion are difficult to obtain. One circumstance which we felt to have particularly unfortunate consequences for village co-operation in development was the use in Lesotho of exclusively Party committees as the vehicle of village development ... exclusive committees cannot, we find, gain the voluntary support of latent opposition." (Ibid., 186.)

DIAGRAM 4

Characteristics of communities

Given a national government programme, it may generally be easier to organize community participation in communities:

1. Where there is a greater degree of identification as a community and solidarity among the community as whole: this will generally be a matter of the lack of strong social and economic differences among the population, and the extent to which their internal relationships are more numerous and intense than their relationships with outsiders. Therefore in:

   rural rather than urban communities

   smaller rather than larger rural communities

   more isolated or remote communities

   more subsistence-oriented rather than commercialized communities (but they may be poorer and the refore less able or inclined to make contributions)

   more settled communities rather than those with a population changing through migration

   communities not divided among different ethnic groups

   communities not divided among castes

   communities where all families are at a similar economic level

2. Where there are already strong forms of organisation and authority (traditional councils, chiefs etc., or party committees in one-party states), provided they command general support.

3. Where factionalism is less marked, factional divisons are currently less tense, or factions can be brought to work together.

IX. THE CHOICE OF STRATEGY

BASIC CONSIDERATIONS IN THE CHOICE OF STRATEGY

One theme has run through much of this monograph: namely, that the depth of participation varies in different approaches, and also in the way in which any given approach is carried out in practice. By "depth of participation" is meant both the extent to which the local community is involved in all aspects of the planning and implementation of changes and improvements in their living conditions, and the extent to which all members of the community are involved or are enabled to challenge a control exercised over their lives either by outsiders or by other groups within their community.

The first decision which must be taken by any government or other agency contemplating community participation is over basic strategy, and this decision may well concern a trade-off between the depth of participation and the coverage - the speed with which the largest possible number of people can be provided with a service such as water or sanitation facilities. The strategy chosen will depend in large part on the emphasis given to each of the three goals:

1. Rapid coverage, and participation as a means of carrying out the specific actions needed for successful implementation of the sectoral project, such as installing a water supply or sanitation system.
2. Community development: fostering the growth of the community's capacity for self-reliant cooperation.
3. Social justice: the integration of the underprivileged into community life; participation as a means of ensuring that the interests of disadvantaged sections of the population, including women, are served, raising the level of collective self-confidence among them and reducing their dependence on the more powerful.

The first of these goals implies no more than a "minimal" strategy, concentrating on meeting in the easiest way the requirements of the job on hand. This will probably mean communicating mainly with a small group of community representatives and individuals active in organising the project in each community, and responding to difficulties as they arise rather than looking for opportunities to expand the scope of participation.

The second goal involves a more active strategy of imaginatively seeking ways in which more community members can become involved in more ways, understand more fully the reasoning behind what they are asked to do, and participate more fully in making decisions in implementation. It requires more time, effort, and skill on the part of agency personnel at village level. The potential reward is that the community gains in knowledge and skills, and in individual and collective self-confidence; these gains may be more important than the completion of the particular project and outweigh the costs of the greater extension effort. There will be no pre-existing community demand for this approach to be adopted: the impetus must come from a commitment among the external agencies involved. In this respect, one can draw a parallel with preventive health activities as against curative care, for which there is a greater demand.

The third goal may raise even more problems and difficulties: it requires a "maximal" strategy. The attempt to involve most actively those sections of the population, the poor and women, where they have been relegated to a subordinate role in the past, will meet with the incomprehension and most likely the hostility of the dominant groups. In some places it will simply be impossible to achieve much in this direction; thorough structural reforms will be needed to break the power of the dominant groups before anyone can act against their wishes. But in other cases it is possible for an agency to concentrate its efforts on the subordinate groups. In the case of a water

supply system, it will not be a question of working exclusively with poorer sections of the population (as it might be with agricultural extension, for instance): the point is only to ensure that the project benefits and actively involves the poor as well as the rich, women as well as men. However, there is a case for trying to work mainly with women, since they are the main carriers and users of water in most communities. The attempt to do so will undoubtedly meet with problems, since women are regarded in many communities as incompetent to deal with "modern" technology introduced from outside the community, or even to deal with formal relationships with outsiders on behalf of the community; and women, largely, accept exclusion from these roles. A water project may, however, offer a "handle" for confronting such exclusions, as it can be argued that it is a matter of particular concern to women.

The difficulties involved in any attempt to achieve a greater depth of participation should certainly not be underestimated. However, unless it is achieved it is extremely unlikely that the full potential health benefits will flow from the installation of the water or sanitation system. Health benefits depend largely on substantial changes in standards of hygiene and the use of facilities, and such changes are unlikely to be brought about without the promotion of a considerable depth of participation. An active involvement with the planning, construction, and operation and maintenance of the water supply will be complementary to the efforts being made to improve hygiene and sanitation practices, in the sense that the more interest and involvement people have in either area, the more receptive they are likely to be to suggestions that they become involved in the other.

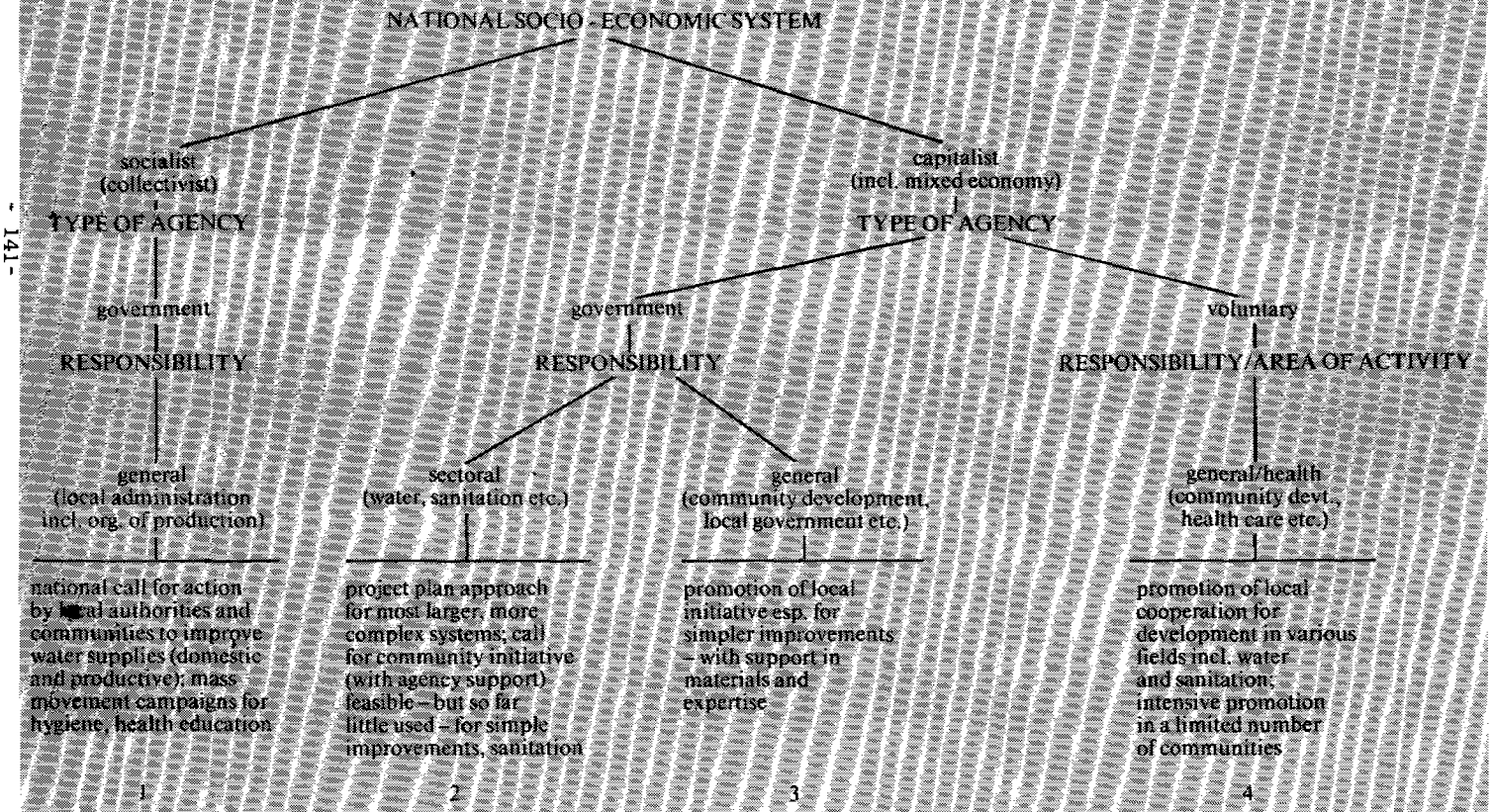
CHOICE OF STRATEGY IN RELATION TO TYPE OF AGENCY

Universally, then, a considerable depth of participation may be regarded as desirable. However, different types of agency in

DIAGRAM 5

Community participation options for different types of social systems and agencies

Some major differences between the circumstances under which community participation programmes are adopted, and the typical approaches which may be followed.



These numbers refer to sections described in the following ten pages of text.

different socio-economic settings are in different positions with regard to the priority they can or need give to each of the three goals of rapid coverage, community development, and social justice; and in some settings these goals can be pursued together, with fewer conflicts between them, more easily than in others. Some of the arguments about what constitutes "real" community participation fail to appreciate the differences in the position of different agencies. First, there is the basic difference between the situation of government agencies and voluntary agencies, and the basic difference between socialist countries, where the economy is organised largely through popular mobilisation in cooperative or collective enterprises, and capitalist countries where economic activity depends on private initiative. At the risk of over-simplification - there are intermediate cases - these basic differences are shown in Diagram 5 and related to the typical options open to agencies in each case. The following paragraphs will discuss these options in more detail.

1. Socialist countries are, almost by definition, those which have established the best conditions for campaigns for local initiative and community action: the basis of the socialist ideology is the encouragement of collective enterprise. The more the enthusiasm of people to work together in the common interest can be mobilised, the greater the possibility of success for community action. The ferment of a national liberation movement or a revolutionary change is a period when people are motivated to act in terms of group interest rather than narrow personal concerns. This enthusiasm can be capitalised upon for campaigns in the field of water, and of sanitation and hygiene in particular. In a subsequent period of more routine administration, the population will be organised through mass organisations and collective enterprises, and can be called upon through them for community action. A decentralised socialist system, in which local authorities

are responsible for a range of services as well as having an income through their role in the productive system of the locality, will enable national government to call upon local authorities to use their own resources (including the mobilisation of their people) to solve their water and sanitation problems. Each local authority will be expected to achieve full coverage of all its population at whatever level of service is provided.

This is one characteristic of an approach which "serves the people": that success for any improvement in living conditions is measured in terms of full coverage, and attention is focussed on completing coverage before it is turned to the next level of improvement. While such egalitarian principles are adhered to, there will be a positive popular response to the call to contribute to improvements by voluntary work, and also to campaigns for changes in hygiene and sanitation practices. Such campaigns can achieve more than conventional approaches to health education, also because they do not present their message through just one source of information and persuasion, but for a short period are accorded major attention by all organs of government and ruling party, as well as the mass media and the mass organisations through which the population is mobilised: in this way, the campaigns take on the nature of a mass movement.

In a socialist system, where local authorities are largely responsible for the organisation of production as well as services, it is possible to find substantial resources for water improvements from the profits of local productive activities; it is also possible to combine the improvement of domestic water supply with that of irrigation water and water for livestock, since the same local agency is responsible for both.

2. Sectoral agencies in non-socialist countries (agencies responsible for water and sanitation systems) may adopt a project plan approach using participatory methods; they

may also call upon communities to carry out their own improvements, offering agency support in the form of materials they will need and the help of trained agency personnel: this may be called the agency campaign approach. A project plan approach is one in which the agency selects a certain number of communities to be served in the next phase of its construction programme, always retaining the initiative though using participatory methods in carrying out the programme in each community (at least where it obtains a response from the community). The participatory methods are primarily those described in chapters III and IV of this monograph: consultation, the use of community contributions in construction, the training of a local operator. They should include also a health education element (see chapter VI). An agency campaign approach implies no selection of communities, but campaigns for simultaneous action by a number of communities. The communities select themselves by responding to the call. The agency must be able to provide support in materials and expertise to a large number of communities at a time, and must therefore be adequately manned and funded for this; it is also essential for this approach that the support is kept to a relatively modest level for relatively simple improvements, so that requests for support can be met within a short time, and so that it remains primarily a community activity. The choice between these approaches is related, then, to the complexity of the improvements needed: whether they are within the capacity of the community given only a modest amount of assistance; it is also related to the question of the depth of participation and the three goals discussed in the previous section.

The goal of rapid coverage may best be achieved, in most countries, by adopting both approaches at the same time, each for different types of communities. The government

agency responsible for rural water supply will then use a participatory project plan approach for larger villages or those where no improvement is possible without the use of machinery and highly skilled labour. At the same time, however, a campaign approach will be used so that some improvements can also be introduced in all the other (generally smaller) communities which cannot be covered for the time being by the agency's project plan. Responsibility for launching and supporting such a campaign may be taken by the same water agency, or it may be given to a different agency or to regional and district authorities. The greatest obstacle in the majority of countries is the disinterest shown by agencies of all types in what are regarded as petty and makeshift improvements: the realisation is only slowly spreading that a high minimal standard of service often means, for the majority of the rural population, a service postponed into the indefinite future.

Ideally, the water agency itself will appreciate this point and then it will be in the best position to support community initiatives, since it will have, or be able quickly to develop, the appropriate technical expertise. An important reason for keeping responsibility for such a campaign within the same water agency is that a single maintenance and repair organisation should cover effectively all types of water supply in an area; and, as must so often be emphasized, an effective maintenance and repair organisation is essential for all types of supply. Whatever villagers may be trained to do for themselves, they cannot (in most social circumstances) be left with entire responsibility for maintenance of the supplies. This is because the community is not usually organised in such a way that it can be relied on to carry out this job by itself - even if the technical knowledge and the funds seem to be available.

The goals of community development and social justice can be fostered within a project plan approach, if the water agency genuinely pursues them. The problem is that sectoral agencies generally see their tasks rather narrowly in terms of their sectoral responsibility; also, a numerical target of installing water supplies will often claim more attention than a less clearly defined goal such as that of building up a capacity for self-reliant co-operation in a community. Therefore it is suggested that these goals need to be borne constantly in mind when planning procedures to be followed in the community, and at all stages. For instance, in many past and present projects community labour (paid or unpaid) is rejected as unsuitable for semi-skilled as well as skilled tasks in construction, on grounds of costs in money or time. If the goal of community development is taken seriously, however, community members must be taught skills and given an understanding of how their water or sanitation system works, even at the cost that rather fewer supplies will be built over the time period of the plan - it is in this kind of situation that there is a trade-off between coverage and depth of participation. It should be remembered, however, that the more community members know about the water system, the better they will be able to look after it.

The goal of community development - building up capacity for self-generating change - is central to the campaign approach in which community initiatives are called for and supported by the agency. For those communities which respond to the call, this should indeed be the effect provided that the agency support is forthcoming. But there is a question whether this will leave behind those communities which do not respond to the call; also, there may be no change in patterns of dominance within the community.

Where these problems exist, their solution may require taking the campaign to the community in a more organised way - through patient promotion work which will necessarily be in a limited number of communities at a time.
In this case, the sectoral agency will be undertaking tasks more often associated with community development departments or voluntary agencies.

The choice between approaches is, as suggested above, also a matter of the scale and complexity of the types of improvement in water and sanitation systems that are required. In most countries, where local authorities are ill-equipped to carry out the task, the construction of more complex systems involving for instance powered pumping will generally require the sectoral agency project plan approach; so, of course, will town sewerage systems where these are required. However, there are many other improvements in the field of water, sanitation, and hygiene practice which could be carried out by community action through a campaign approach, both in communities which already have a water supply and, particularly, in those using unimproved sources. It is, perhaps, in the improvement of sanitation facilities and hygiene practices that the campaign approach is most useful. There has been until recently a greater concentration on rural water supplies in developing countries to the relative neglect of sanitation; now, it is increasingly being realised that sanitation and hygiene require more emphasis than they have been given. But this cannot be a matter of external agencies coming to build latrines, even with local labour and similar participation as in the case of the construction of water supplies. For sanitation and hygiene, which rely much more on private household latrines and behaviour changes, a shift of emphasis toward the campaign approach is required.

3. Government agencies in non-socialist countries, other than sectoral water agencies, can also have an important part to play in fostering community participation in this field. One possibility is a full-scale national campaign launched at the highest government level and involving a variety of official organisations. In such a campaign the activities of all departments with relevant tasks - health ministries, community development agencies, regional development projects, various levels of local administration and government, etc. - could be coordinated in a single plan to help each community to achieve a minimal level of both water and sanitation improvement within a short period of time. Such a plan might require, for instance, the establishment by each regional authority of its own unit for the promotion, construction (with the community), and maintenance of village water supplies, following a model which may already have been set by a water agency but not yet extended nationally.

In the absence of such a full-scale national campaign, it will still often be possible for particular agencies to mount their own campaigns for community action, albeit on a smaller scale.

Community development departments, in particular, are in a comparatively good position to adopt an approach with a considerable degree of depth of participation. This is the approach which guided the original establishment of such agencies. In many countries, however, they have come to adopt procedures indistinguishable from those of sectoral water agencies, with little depth of participation.

The approach suggested starts from the same basis as the sectoral agency campaign: the offer of support in the form of materials and expertise to communities ready to undertake their own water/sanitation improvements. However, in

the case of community development departments in particular, this can be supplemented by sending trained extension workers (a) to promote community organisation in those communities where it is deficient and where, for that reason, there has been no response to the offer of support, and/or (b) to help in community organisation and steer it in the direction of involving disadvantaged groups, involving women in project activities, and ensuring that benefits are fully shared; also (c) to discuss and encourage in the community necessary changes in hygiene and sanitation practices.

Health ministries, through their departments responsible for primary health care, may be able similarly to encourage a considerable depth of participation in small-scale water and sanitation projects, particularly through appropriate training of community health workers (including also the guidance and supervision given these workers, who are villagers themselves, while on the job). The possibility of combining the roles of village health worker and operator of the water system has already been mentioned. The role of the sanitary inspector may also need to be reconsidered, especially where it is currently essentially one of punitive law enforcement. It should become one of encouraging, providing material assistance and advice, for improvements in sanitation, and might also include wider aspects of extension work discussed in this monograph: assistance for water supply improvements also, and a participatory approach to community education and behaviour change.

District-level administrative authorities may also be used as the channel for support to be given to communities undertaking their own initiatives whether in water and sanitation or in other fields. The advantage - in theory at least - is that the communities make the choice between

alternative projects according to their own felt needs. This is nullified if the resources allocated in this way are too meagre, or if the district authorities are reluctant to approve projects according to the communities' choice. There is often a fear that resources distributed in this way will be misused at lower levels. However, it can be argued that while this fear may sometimes be justified, the encouragement of community participation and initiative require that communities be given the resources they need to take initiative.

4. Voluntary agencies, in countries with a basically capitalist socio-economic system, are often in a better position than government agencies to achieve a full depth of participation among all sections of the communities where they work, and can push furthest in the direction of self-reliance. Their disadvantage is that they can do so only in relatively few communities. Voluntary agencies are not under the same political constraints which government agencies may be under, including the pressure from local communities to provide services to them. They can concentrate considerable effort in terms of skilled manpower upon a limited number of communities, urging and organising them to adopt otherwise autonomous and relatively self-sufficient solutions to problems such as those of water and sanitation. Voluntary agencies may also, on occasion, be able to overcome the class divisions of rural communities by using their influence and detailed local knowledge to ensure that the benefits of projects are equitably distributed; this may sometimes be more difficult for government agencies with their formal ties to local authorities and the informal ties which staff members may have with the higher strata of the local population. Apart from these possible advantages, voluntary agencies may be more committed to finding self-reliant solutions and encouraging communities to

adopt them, because of their own ideology. In particular, middle- and lower-level staff of voluntary agencies are often more ideologically committed to such goals than are their counterparts in government services, even when the government agencies have adopted them at policy-making levels.

Further, where a voluntary agency does not have very large funds at its disposal, nor any help from government, it may be obliged to seek self-reliant solutions: the same is true of an organised community which cannot get any help. Typically, a voluntary agency has funds to initiate activities, but these activities are expected to become selfsustaining, and funds are not expected to be available indefinitely. It is one thing for the representative of a voluntary agency (or an individual well-wisher) to advise self-reliance for a community, when he cannot do anything in the long term to help beyond giving advice; it is another thing for a government to advise communities to fend for themselves when that government has large funds which it spends on modern developments for a narrow urban élite (it is a different thing, again, for a government with small budgetary resources, which it spends in a socially equitable way).

APPENDIX: SOME OPERATIONAL SUGGESTIONS FOR COMMUNITY PARTICIPATION

Given the very wide range of circumstances under which community participation can be applied in the field of water supply and sanitation, there is no possibility of providing simple guidelines for practitioners. However, on a number of topics it may be appropriate to include here some more detailed discussions of particular practical points.

1. WATER AGENCY ORGANISATION FOR PARTICIPATION

Government agencies responsible for rural water supply and sanitation are institutionally located within a variety of different departments, ministries, and autonomous bodies in different countries. In general, there is probably no need to change the existing position in order to introduce the participatory methods discussed in this monograph. There are advantages in having one single agency responsible for all types of supplies in any given area: particularly in minimising the cost of an effective maintenance and repair organisation. However, there are often costs in changing an existing organisational structure, and it may not be necessary. What will always be necessary is to establish a framework within the agency (or agencies) involved, for the introduction of the community participation techniques. The alternatives which appear generally to be possible are these:

(1) To establish a special unit within the agency, to be responsible for the motivation and organisation of the community. This was done, for instance, in Colombia, with the Promotion Section within the National Programme for Basic Rural Sanitation (Mora Ramírez & López Orozco 1976).

The unit carries out its own staff training in community development techniques, plays a major role in the selection process through community surveys to find out if communities meet selection criteria, establishes and monitors water committees in the communities to administer their own supplies, and performs all the necessary liaison between the communities and the water agency. Upon the initial establishment of such a unit, it will need to build up its experience from small-scale operations at first; the methods pioneered in certain areas will then be extended to others. A special unit or department of this kind can take on the combined functions of promoting community participation and education within a project plan approach, and implementing an agency campaign. In order to provide support to large numbers of communities, it would then need to be able to make available to communities at short notice the help of technical experts and relevant items of equipment, and to handle the timely despatch of materials upon request from the communities, without bureaucratic delays. The same department might then also take on the maintenance and repair of all rural facilities. Such an arrangement might be particularly suitable in the case of an agency responsible also for complex urban water systems. A special unit of this kind might be staffed in part by sociologists (at senior level) and community development workers (at junior level), in addition to agency personnel with field experience in rural areas.

(2) Without establishing a special section, to implement a programme in one demonstration area first. Local staff from other areas will then be brought to the demonstration area to familiarise them with the participatory methods developed - an informal training which might be supplemented by internal seminars or other types of more formal training.

(3) To make gradual and incremental alterations in existing procedures throughout the country without establishing a special section, and without setting up a special demonstration area. The more familiar agency personnel are with ideas and practices of community participation, perhaps through its use by other departments of government, the less may be the need for special units or lengthy periods of training in demonstration areas or elsewhere. There will, however, be a need for detailed orientation, and for "training" of staff at least in the sense of providing informal clarification and explanation of what they are expected to do. Again, this might be supplemented by internal seminars or other types of more formal training.

(4) To plan a nationally comprehensive community participation programme, with a thorough restructuring of the agencies responsible for water and sanitation. This is not generally recommended, since it provides less opportunity than the foregoing alternatives for the feedback from communities which is possible when the participatory methods are introduced gradually or in one area first. However, where a national campaign involving a number of different agencies is contemplated, it will be necessary to make a coordinated plan.

2. ONE MODEL FOR TRAINING OF EXTENSION STAFF

The staff training required to embark on a participatory programme will vary in different countries and agencies according to such factors as: whether staff are available who already have relevant experience; whether the same staff will take one all the necessary functions of technician, promoter, and health educator; what training resources are available; what standard of general education can be expected among trainees; and, indeed, whether new trainees are being taken on from outside the agency's existing staff for an expanded programme. In many cases, however, there will be good reasons to prepare a single

cadre of extension staff able to carry out all the functions required at village level.

One of the most valuable training programmes developed for this purpose has been that of the Agua del Pueblo ('People's Water') organisation in El Salvador and other countries of Central America (information form Agua del Pueblo, Chimaltenango, Guatemala). Recognising that a gap exists between craftsmen such as plumbers, who do not have enough training to be able to design water supplies, and engineers, who are over-qualified and often unwilling to work in the rural area, and who have problems of communication with rural people, this organisation has instituted courses to train an intermediate level of technician-promotor-educator named 'constructor-promotor of rural water supplies'. The course, of 6 months (908 hours), covers both technical and social aspects. The trainees will generally have 12 years' schooling and will have to pass a test of mathematical ability; they will also be natives of the region where they will work. A detailed instruction manual has been prepared. This system is parallel to that of the rural health technician, also trained in Guatemala as an intermediate level between the medical doctor and the village health worker. A contructor-promotor will be able not only to coordinate the planning and construction phases in the communities, but also to supervise the subsequent operation and maintenance, both by liaison with community water committees on questions of organisation and finance, and by giving direct technical support to an operator. The Agua del Pueblo system also trains the constructor-promotor in sanitation including latrine construction, and in health education in all related areas including teaching mothers the management of dehydrated children. These are rather ambitious aims for a 6-month training course, and it may be that in countries where teaching staff are themselves less experienced, or where general educational levels necessitate the use of trainees with less than full completed secondary education, a longer training period will be necessary.

3. PROJECT SELECTION WITHIN A PROJECT PLAN APPROACH

A project plan approach implies the establishment of a plan of work (on the construction or improvement of facilities) in selected communities over a defined period of time such as one year. It may be that the choice of communities is sharply constrained by logistical factors (the need to use available equipment to best advantage, e.g. by a programme of drilling at all suitable sites in one area first and then going on to another). Within the limits set by such constraints, a procedure for the selection of communities would be clearly established, otherwise selection is likely to be haphazard and dependent on informal influences. Supplies should go not to communities with the best informal connections, but according to criteria such as real need, felt need and readiness to contribute, and relative costs. While felt need and readiness to contribute in some form are essential, the main basis of selection should not be the amount the community is willing to contribute or the speed with which it organises a financial deposit or an official petition.

It is suggested that the best basis of selection is an objective measure of real need compared with the cost of meeting that need: for water supplies this will be effectively measured by estimating the total journey time (or the total distance covered on foot)* to fetch water from the existing supply (at the most difficult time of year, the latter part of the dry season), and the cost of installing a new supply. The procedure can, without undue loss of information, be simplified as follows:

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* Where, for example, the water has to be carried up a steep slope from the existing water source, distance alone is not a sufficient criterion: there must be an estimate of the time taken on the journey, with perhaps an allowance for extra effort.

(1) Obtain estimates for the communities (to be compared in terms of priority) for the following: (i) number of households (or population divided by 5, including of course only the households which will be benefited by the new supply), (ii) average distance walked on foot from each house to the existing water sources used in the driest season (in general, this average will need only to be very approximately estimated, e.g. as the typical distance walked where the main source is at a distance from a village), and (iii) cost of installing a new supply of given type (e.g. standposts within a certain distance of every household) - again this may be approximate.

(2) Multiply (i) by (ii) to obtain a figure for the total distance walked each day to fetch water, assuming one journey only by each household. Although this assumption is not realistic, the effect of making it will be to give due favour to those located further from supplies. Thus, community A might consist of 500 people (100 households) clustered in a hamlet at 1.5 km from a stream used in the dry season: the total distance will be 150,000 metres. Community B might have a population of 2,000 (400 households), more dispersed, but where the average distance to the existing water sources may be estimated as ½ a kilometre: the total distance is then reckoned as 200,000 metres.

(3) Divide the total distance figure by the estimated construction cost to give a cost-effectiveness in metres of daily walking time saved per unit of currency spent in each case. Thus, a new system in the same community A might cost 20,000 pesos, so that we calculate each peso of capital cost as saving 7½ metres walking each day; the figure in community B might be a cost of 100,000 pesos with a resulting saving of 2 metres per peso per day. Thus, the comparison shows that while total distance saved

in community B is greater, community A has considerably higher priority because of the lower cost.

The above calculation takes into account most of the relevant factors: both economic benefits and health benefits may generally be expected to follow reductions in journey time for fetching water, since the time can be put to other uses and since more water can generally be expected to be used for hygiene. In some cases, it may be necessary to include additional elements into the comparison, for example, gross differences in the quality of the existing sources, or the length of time each year that the worst conditions (with the longest journey, on which the comparison was based) prevail.

The criterion of willingness to contribute (including felt need, commitment, enthusiasm, capability of organising a contribution, potential for participation, acceptance of the participatory project, etc. - these expressions all have closely related meanings) should, it is suggested, be brought in as a condition for going ahead with a project in a community already selected on the basis of the priority ranking of real need as described above. In other words, in a project plan approach which involves a considerable element of government subsidy or benefit to chosen communities, it can generally be expected that the overwhelming majority of communities where there is a real need will be very willing to make a contribution: it is therefore appropriate to make the selection on the basis of comparing real need and then confirming that the willingness is present, rather than trying to establish which communities are "most" willing, an exercise which would only, as already said, favour the best off and best organised communities (the same ones will also be favoured by other programmes, leading to an exacerbation of inter-regional and inter-community disparities).

It is to be noted in particular that the suggested ranking procedure takes into account the general desirability of serving places with a larger population before smaller ones, which is a matter of the usually cheaper cost per person served (for a given level of service) and the related fact that more people - a higher proportion of the total national population - can be served more quickly for the same effort). But it does not do so by the crude method of simply serving the largest places first or setting cut-off points and saying that places below a certain population figure will not be served in the plan period.

Such a method can easily lead to a situation whereby those groups in most need are left without service: in drier areas, where journeys for water are longest, the people have usually been obliged for that very reason, the scarcity of water, to farm the land on a more extensive basis and therefore to be living in smaller villages.

4. APPROACH TO THE COMMUNITY

This will be carried out normally by the agency's community-level extension agent (technician-promotor or promotor). He (or she) should cover an area and be familiar with the language and culture of that area. He should be trained to be aware of the kinds of social problems discussed in this monograph, and with a little experience will (if he has an aptitude for the job) learn to anticipate some types of problems in organising community participation in particular types of community in his area. In certain cases where problems of the kind mentioned in Chapter III are anticipated (community factionalism etc.), he will need to make his approach to the community with great discretion in order to avoid, for instance, being identified with one faction and incurring the non-cooperation of others. It may be necessary to make discreet enquiries about a com-

munity before entering it (informally, asking others who know the community). However, in most areas this degree of care will be needed comparatively rarely: most communities will be united in welcoming the opportunity for a new service.

On entering the community, the extension agent will contact its formal leaders or representatives if any. If a community has: (i) its own local council in a local government structure, (ii) a formal body such as a development committee, or (iii) a traditional council, chief, or headman recognised by government as representing the community, the agent should meet with such bodies to present outline proposals for a participatory project.

A public meeting, or sufficient public meetings to inform all sections of a larger community, should also be held before decisions or agreements are made. In communities which have no such councils, the agent should simply call a public meeting. At these meetings, he should present, most importantly, the agency's policy on the levels of service which can be offered, on the one hand, and the contributions and charges which the community and individual beneficiaries will be expected to make, on the other. The community should be fully aware from the beginning of the bargain offered, and if it is a reasonable bargain there should be little or no need for promotional propaganda presenting the health or other advantages of the proposed service. There may be a need to present the health advantages only in the cases where sanitation or water purification facilities are being offered in a community which already has good access to water.

5. FINANCIAL ASPECTS

On the expenditure side, there will be an initial cost for installation and then a recurrent cost for operation,

maintenance, and repair; one may also take into account an eventual cost for upgrading and extension. It is necessary to clarify at the beginning how each of these costs will be met: too many systems break down because there has been no serious consideration of how recurrent costs will be met. The problem may be particularly great in the case of water supplies pumped to public standposts, because pumps require considerable expenditure for fuel etc., while it is difficult to collect charges for standpost supplies.

On the revenue side, there will of course generally be a need for subsidy from government (it might be from regional or local levels of administration), in addition to community contributions and service charges. It is often assumed that the subsidy should be applied to construction, while the community should be financially responsible for subsequent operation. This will be satisfactory in better-off communities where house connections cover all households, and service charges can be set at rates which will cover recurrent costs. In the case of standpost supplies, there is a good case for applying subsidy to the recurrent cost (providing the service free of charge), while perhaps asking for a substantial community contribution to the initial construction cost: it is usually easier for a community, without its own regular sources of revenue, to gather once a lump sum than to raise regular small amounts. Moreover, those who use public standposts are, in most countries, among the poorer sections of the population: not charging them for water is a simple and effective measure of redistribution.

The greatest problem in achieving successful community participation is likely to stem from differences in income within the community: what some can afford others cannot. It is important to ensure that whatever bargain is made with the community, it meets the real needs of the poorer sections of the population: they should not be required to pay for a level of service, such as a house connection, which they can ill afford. In many

areas, where the formal leadership of the community is in the hands of its better-off members, it will be necessary for the extension agent to ascertain informally the real views and interests of poorer sections, and supported by the other personnel of the agency, to uphold those interests tactfully in planning the facilities with the community's formal representatives, especially with regard to the contributions and charges to be demanded of community members. Often the poor are unable to express negative views openly, but instead show non-cooperation or apathy when asked for a contribution: it will be the task of the extension agent to ensure that this need not occur because the bargain is favourable to them too. In particular, of course, the situation must be avoided whereby dominant community members can derive unfair advantage, e.g. a subsidised supply used for stock-rearing or irrigation. When the water is used for economic purposes as well as domestic ones, it will normally be appropriate to insist on full economic charges for the amounts used, i.e. charges which reflect both recurrent cost and interest and capital for the repayment of construction cost.

Thus, subsidies are appropriate:

(1) In the capital cost of all facilities except those with an economic use, in which case an initial loan can be recovered through charges. But communities may be required to provide labour or local materials; they may also be required to make an initial lump sum financial contribution, especially in areas where this is relatively easy for communities to raise - but it is often not worth the trouble (the amounts collected are often small in relation to real requirements, but community members think they have paid for the supply). Where house connections are provided, part of the capital cost may be recovered through subsequent charges, but in this case poorer sections should be exempted or given the alternative of a free standpost supply.

2. In the recurrent cost of standpost supplies in particular, and to cover the cost of a maintenance and repair team for all facilities except those where household charges can be made covering this cost. Maintenance and repair should never be simply left as a responsibility of the community.

6. CONSULTATION WITH THE COMMUNITY

The extension agent will present the agency's policy with regard to financial arrangements for each type of facility offered, but will encourage the consideration of alternative options where they are feasible. He should ensure that the whole community is aware of all options through open meetings and/or informal discussion. Together with the community, he should make a list of requirements for different types of water (see above, Checklist no. 1), plan to meet the community's requirements, and also consider with the community what types of sanitation facility are appropriate (rather than promoting a predetermined solution such as a type of latrine). He should, of course, point out the health and economic advantages of particular levels of service or types of facility, where these are known. Options should also be presented in the design of user facilities insofar as the details most relevant to users are concerned: questions such as whether there will be laundry facilities, whether latrines will have seats, the siting and height of taps and the way in which waste water from taps will drain away (or be used for gardens), whether latrines will be of composting type etc.

If the community is to be involved in the construction of the water supply (or communal sanitary facilities), or in operation and maintenance, then another topic of consultation will need to be the fixing of exact responsibilities both as between the community and the agency, and also to groups and individuals within the community.

Generally, a water committee should be formed, which will organise the details of community participation and be involved in health education, together with the extension agent. It should represent all sections of the community, including women (but note problems outlined in Chapter III: it may still be necessary for the extension agent tactfully to uphold the interests of non-dominant sections).

Meeting the community's requirements may be problematic for an agency with a responsibility, say, only for domestic water supply when the community's requirements include the need for water for livestock. However, if community participation is to mean anything it must mean a willingness to change administrative arrangements in the light of the communities' needs. Combined provision for people and livestock is almost certain to be cheaper than separate provision. If no provision is made for livestock, owners are sure to make use of domestic water supplies for their stock, and this will lead to problems of inconvenience and pollution, and very likely to disputes (e.g. where a local population is divided between those with stock and those without). It may also be essential to make provision for semi-nomadic pastoralists needing water for themselves and their stock as they pass at certain times of year, to avoid disputes over their use of domestic supplies.

7. OPERATION AND MAINTENANCE

A local person should generally be trained for the tasks of operation and preventive maintenance: it is necessary to emphasise the latter, since it is often ignored. But it remains imperative to support this local operator through regular visits by a professional maintenance team and by a service network which will enable him or her to obtain spare parts and professional help quickly when it is needed.

The job-specification and remuneration of the operator should depend on the complexity of the system: it is not reasonable to pay an operator a full wage for a few minutes' activity each day. In the case of the simplest systems, where least work is required, there should be no need for a payment but the operator might be given advantages such as training in related skills. In highly complex systems, full-time operators will be required and they will be unable to take on other functions. In systems of intermediate complexity, however, where perhaps up to 6 hours' work a day are required (i.e. hours of actual activity, not simple attendance to ensure the system is working), there is every possibility of the operator's combining the work with one of the following:

(1) That of a community health worker. This is particularly appropriate since one of the main tasks of a health worker should be education on hygiene and sanitation: also, water systems typically require the presence of an operator to ensure that pumps etc. are working, but with no requirement for continuous work: while community health workers should be available at a 'clinic' to meet the simple curative needs of patients at certain hours each day. The clinic could be located near to the pumps.

2. That of a general mechanic. The operator might be offered a general mechanical training, and helped to open a workshop (again perhaps close to the pumps), as part or full compensation for operating the water system.

8. COMMUNITY HEALTH EDUCATION

The extension agent should work with the water committee (and any community health worker including possibly traditional practitioners) to establish an understanding of which aspects of water use, hygiene, and sanitation practices current in the

community can and should be changed in the interests of health. This is not a matter of bringing to the community pre-conceived solutions such as latrines, but of going through likely routes of disease transmission (see Checklist no. 3, Chapter VI) and discussing habitual practices in detail in relation to each point. (Unless and until water agency extension staff are given the necessary training in health education, it may be that staff should be brought from other departments for this task; but it is unlikely that such an approach will be as effective.)

When the extension agent and the water committee are agreed on changes in habitual practice which are both desirable and feasible for all community members to adopt (i.e. not requiring too great an expense or going too much against cultural norms), they should discuss the ways in which the whole population can be persuaded to adopt them. In smaller and more homogeneous communities, it may be possible to organise an open meeting at which changes are discussed and everyone agrees to make them. In some larger communities, a similar process may be organised within wards or sections, groups of neighbours etc. Water committee members themselves, and other prominent individuals may otherwise conspicuously adopt the changed practices themselves, and undertake to persuade others to do so. The attempt should be not only to make all community members aware of the health arguments, but also that the changes are being made by others in the community, at their own as well as higher social levels.

Such a campaign of persuasion in a community is best carried out simultaneously with the introduction of an improved service (which creates goodwill, and also makes many changes of practice easier). There may be additional ways in which the changes can be facilitated, and if so it is important to introduce them also at the same time: for instance, if latrines are advocated, this change will be made much easier by the provision of free or low cost latrine slabs.

9. AGENCY FAILINGS TO BE AVOIDED

Much of the discussion, including that in the present monograph, of ways in which community participation can be approached, and of how its success may depend on the characteristics of the community, assumes that difficulties with the approach are to be expected in the community. It cannot be stressed too much that difficulties are at least equally likely to be found within the external agency itself. Attention needs to be paid to the attitudes of staff at all levels toward cooperation with people whom they may regard as of much lower status; to continuity of policy and the keeping of agreements, over large and small matters, which have been made with communities; to avoiding delays, particularly when a timetable has been agreed for the work to take place in the local agricultural slack season; to the availability of expert staff and equipment for repairs; and to coordination between the various aspects of a programme, including the health education element and the training of local persons in operation and maintenance.

10. A NATIONAL CAMPAIGN APPROACH

In socialist countries in particular, where a need for the rapid extension of water and sanitation facilities is combined with a dynamic local authority structure leading a popular mobilisation for development, the conditions exist for a national campaign-style effort in which local authorities will take a major role in organising the construction of the facilities in their areas. Elsewhere, local authorities have often not proved effective in carrying out the responsibilities given to them in this field, but that is because they have often been subject to a number of drawbacks compared with national agencies: inability to attract able personnel, a tendency to be dominated by local factions and subjected to

private interests, low resources. Where such problems have been overcome, and in particular where a spirit of service to the people exists at local level, local authorities may once again be called upon to play the leading part.

The main difficulty, in such a case, is likely to be in spreading the necessary technical expertise. It will be necessary to expand rapidly the numbers not only of people able to take the skilled roles in the construction of the water/ sanitation facilities themselves, but of those able to manufacture items of equipment which can be made in regional centres. The two parallel ways in which skills might be rapidly multiplied are: (1) learning-by-doing and (2) mass media involvement in information and promotion. Those with the scarce skills might be organised in teams whose function would be to train others while constructing facilities: the "others" would be invited from each local area needing similar facilities, and would learn through their participation in the work. The emphasis would be given to the training, so that the work at the demonstration sites might itself take longer. Secondly, the mass media could provide a forum for detailed accounts of how particular communities solved their water or sanitation problems, encouraging others to follow the example.

It would still be necessary, certainly, for certain aspects of the work, particularly on more complex systems, to be left to those with greater skills and more experience; but a rapid expansion requires that their skills be used to the maximum, and that will be through the supervision and informal training they can give to others, rather than - in general - by their direct employment to do all the work. When there is a free exchange of experience and skills between formally trained personnel and the local population, building on the skills informally acquired by them, community participation can be developed in its fullest sense.

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