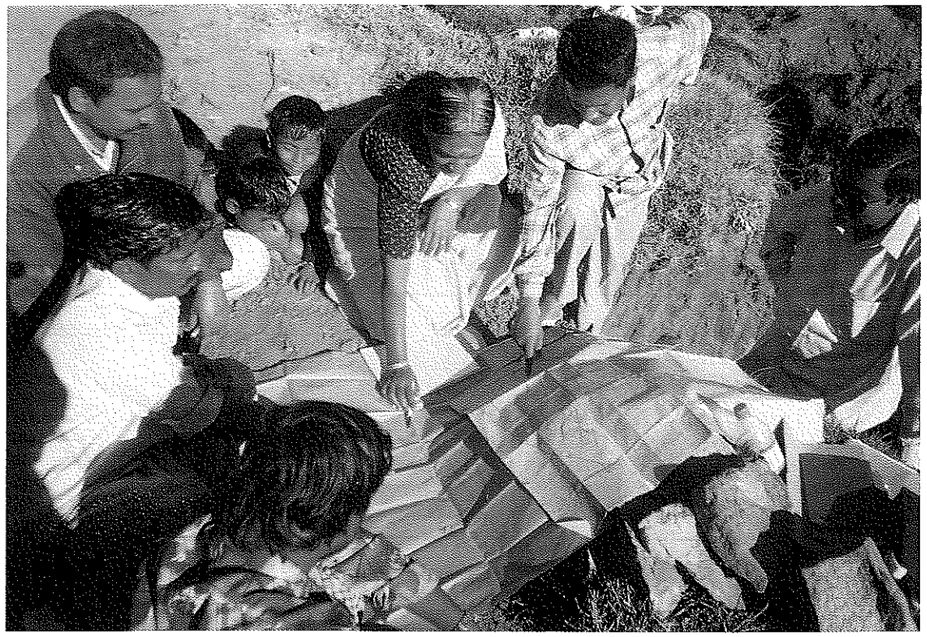
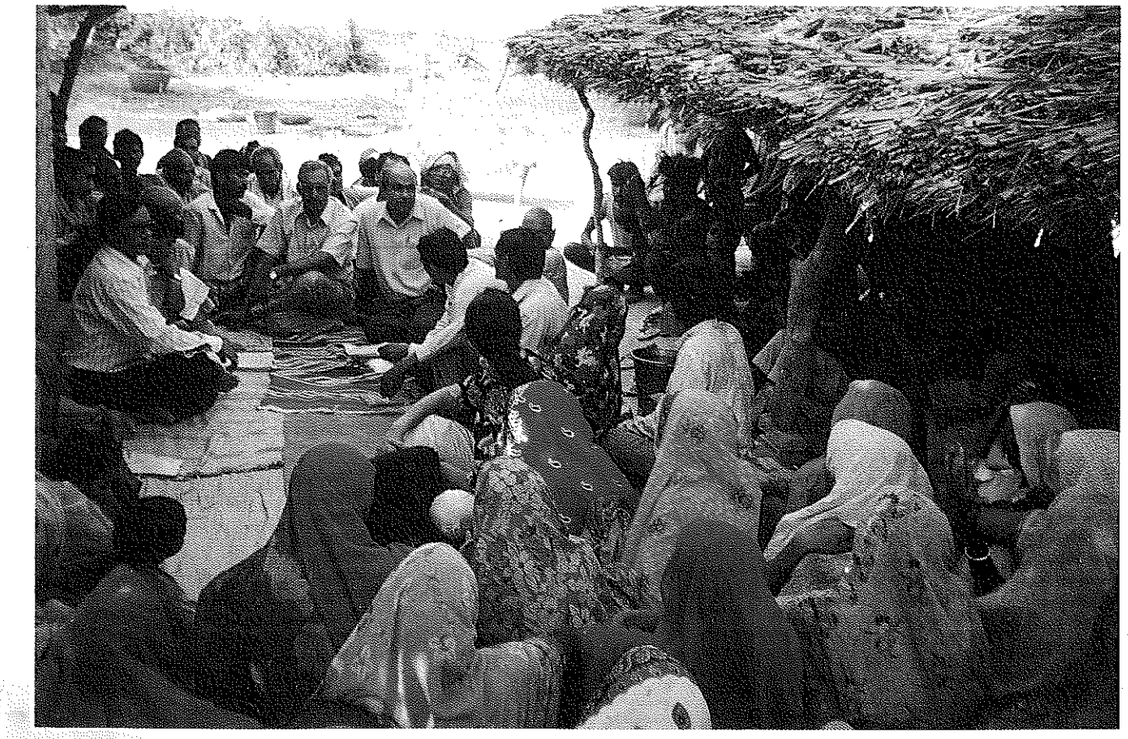
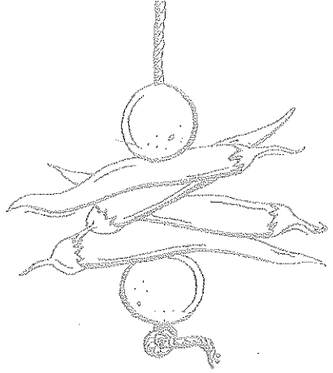






Collaboration between unequal partners.

Watershed management activities till recently were being carried out by government departments and NGOs quite independently of each other. These efforts have amply highlighted that both the Government Departments as well as NGOs have their areas of strengths as well as limitations.

It is the government that possesses a vast spread of its agencies throughout the country and has the infrastructure, resources, and manpower to play a predominant role in any developmental strategy. On the other hand, the NGOs despite their limited resources, have shown more sensitivity towards the needs of the community and have succeeded in not only developing rapport and relationship with poor rural communities but also strengthening their willingness to practice self-help. Keeping in view the relative strengths of both, it was felt that there would be a more holistic approach if the two could be brought together in a more collaborative way. Therefore each RWS has a State Government Department (SGD) and a NGO working together.

However, the project has been conscious in preventing any overlap of their efforts and tries to optimally utilize the strengths and capabilities of both. Presently, while the SGDs work mainly on government land, the NGOs work on private and common land. Furthermore, the departments concentrate on engineering activities while the NGOs are focusing on social development Besides, both are provided opportunities to plan and implement innovative activities that further the cause of watershed management and create livelihood opportunities for the local people.

While the beginning was characterized by building goodwill and respect for each other the project has endeavoured to facilitate meetings and dialogue between the two. They have begun to appreciate each other's strengths and look for opportunities to mobilize the other's support in fulfilling overall watershed management activities. A set of Guiding Principles were evolved and these enable the SGDs and NGOs in relating their work to the expected end results and also encourage them to jointly work out a plan of action on an annual basis and keep each other informed on the progress of their work. It is also now being increasingly understood that within a given watershed, the NGO should begin its activities ahead of the SGD, having a lead time for explaining the objectives and enabling the community to participate.

Broadening the scope.

Watershed Management must include besides soil and water conservation other activities dealing with poverty alleviation, self-help promotion, income generation and capacity building.

In the selected watersheds, the State Government Departments have the responsibility to implement various soil and water conservation measures in order to check soil erosion. However, this has mostly been happening on government land and with little involvement of local people. The project is now providing an opportunity to broaden the scope of these activities and is facilitating the SGDs in implementing other innovative measures that could till recently not be attempted due to the limited list of activities and the fixed cost norms of the Government of India.

Even though the project is providing additional financial assistance for certain new initiatives, care has been taken to keep such assistance within reasonable limits so that the development achieved is realistic, and within the financial capacity of the Government.

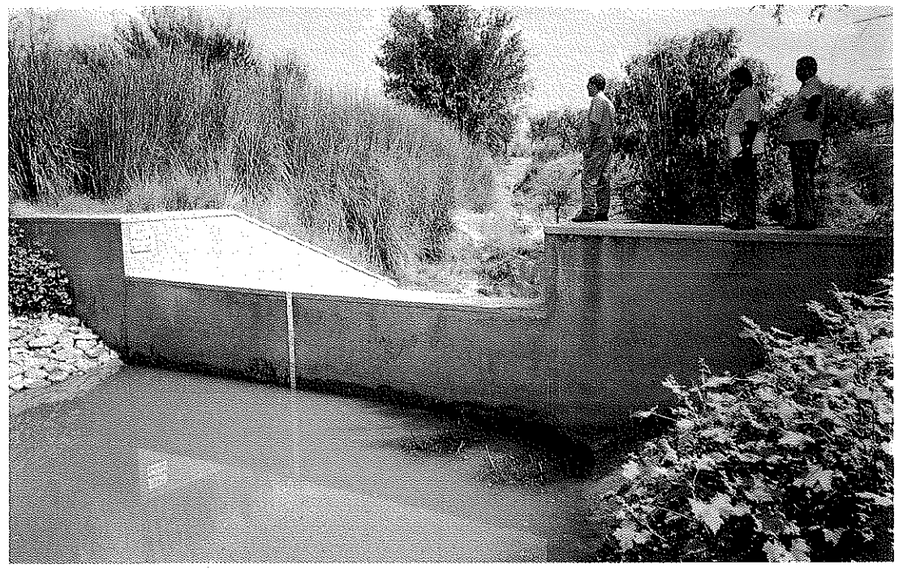
It is also necessary to mention here, that the NGOs have been involved in the process mainly with a view to ensure the involvement of the local people in the various activities. Besides this, the NGOs are also implementing some of the watershed management activities.

who's helping whom?

Till the late 1980s, State Government Departments and NGOs were carrying out conservation activities in watersheds quite independently of each other. Both these types of organizations have their strengths and limitations. The government possesses the infrastructure, resources and human power but its methods are target-oriented. NGOs, on the other hand, are flexible, innovative and sensitive towards the needs of rural communities and have thus been able to influence them to practice self help, but have been relatively unsuccessful in the field of watershed management. This project has brought these two together. Working in collaboration with each other, each contributing its particular expertise, has been an excellent way of ensuring that programmes and activities achieve completion successfully. But this would be impossible without the involvement of the people who belong to the watersheds. There first hand knowledge of their environment coupled with their local technologies is indispensable in the success of a watershed management project.

Listed here are some of the diverse types of activities that are presently being implemented in the RWS:

- Awareness raising amongst people regarding problems in the watershed through training and exposure visits.
- Strengthening community based organisations.
- Soil conservation measures like terracing, gully plugging, silt detention dams, planting grasses, trees, live hedges, developing plant nurseries, etc.



- Water harvesting through ponds, anicuts, and check dams.
- Agriculture development—crop cultivation, agro-forestry, horticulture etc.
- Livestock development and fodder development.
- Developing alternate sources for energy—promoting use of solar cookers, energy efficient smokeless ovens, bio-gas etc.
- Micro enterprise development including non-farm activities.
- Promotion of savings and credit programmes, especially amongst women.
- Health improvement activities.
- Literacy programmes for children.
- Tribal development.

Non-Governmental Organisations' role in the Indian context.

During the last decade the role of NGOs in the development scenario in India has become increasingly important as NGOs have demonstrated the ability to fill the gap between people's needs and available services and resources.

Many projects implemented by NGOs have functioned as pilots for demonstrating new approaches and techniques in motivating and mobilizing local autonomy. In the Eighth Five Year Plan the Indian Government has explicitly stated that attempts will be made to involve NGOs as collaborating partners in various developmental programmes. Their role in providing development services to the under-privileged population will continue to grow during the 90s and beyond.

Unlike the industrialized world, where more often than not the NGO sector is related to voluntary (unpaid) services the context in India is quite different. The concept of an NGO or voluntary agency denotes an agency/group of individuals who have opted to work with development issues (and therefore where the returns/security are much lower than those available in the private/government job sector). NGO workers depend on wages for sustenance and most NGOs survive on a project to project basis. Moreover, the trend of funding is to support project activities rather than fund institution building for the implementing organization. Few NGOs thus have the capability to undertake activities from their own resources.

LEGAL STATUS

At present, the legal status of most NGOs is either a Society or Trust, which is registered with the State Government by 1) a name, 2) according to a specified memorandum of association and 3) rules and regulations for the functioning of the Society. A Societies Registration Certificate is issued to the NGO with a specific registration number. This type of registration entitles the Society to receive funds for development purposes (or as per their memorandum) for which they do not have to pay income tax. The reason is that a society is entitled to receive money for development work as per an approved budget, and is not supposed to generate profits. An NGO can thus be taken to be a not-for-profit-society. Each year the NGO's have to have their accounts verified by a chartered accountant and submit these to the concerned authorities.

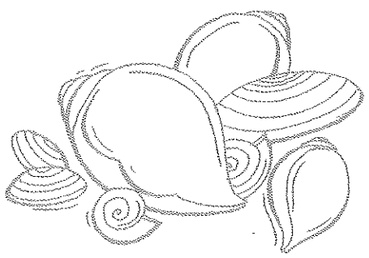
To approach a foreign donor for funds, the NGO must apply to the Ministry of Home Affairs under the FCRA or Foreign Contribution Regulation Act. Its antecedents are verified and on approval, the NGO is given the required clearance and a specific FCRA number. All funds received from foreign sources have to be received in a separate bank account and the NGO has to submit accounts to the concerned Ministry at the end of each financial year. This system was started about two decades ago to increase the accountability of the recipients of foreign sources of funding. All NGOs working with foreign donors are required to have this number. If the NGO does not receive any foreign grants in a financial year, the FCRA number lapses. In some cases where investigations are pending, the Ministry of Home Affairs may grant the NGO prior permission to receive grants from foreign sources, which are to be used for a specific purpose and for a specified period of time only.

GROWTH OF THE NGO SECTOR

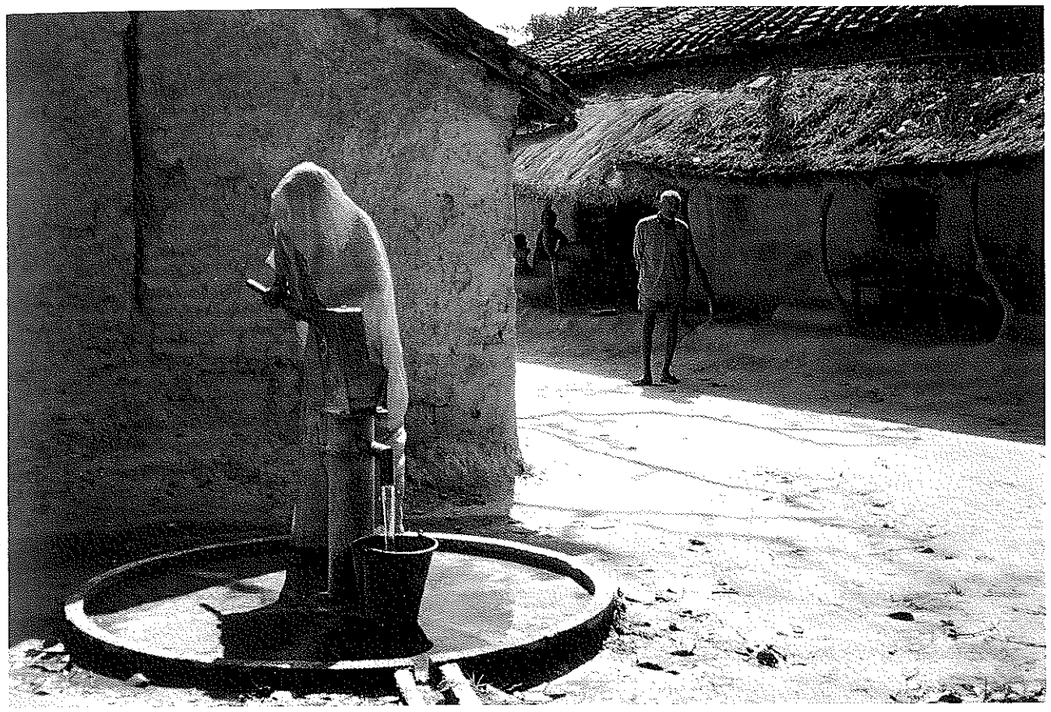
The history of voluntary agencies started in India much before Independence in 1947. In the early days during the 50s and 60s, the focus of their approach was closely linked to the teachings of Gandhi and a number of "Ashrams" were established which had a welfare approach and a semi-religious focus to development. During this period the NGO sector was primarily involved in implementing the extension of government programmes and initiating small area or target group specific projects. In the 70s, two new types of NGOs emerged. The first were voluntary agencies whose prime purpose was to organize people over issues such as minimum wages, access to water etc. and whose strategy was linked to activism. The second type was related to innovative development programme projects in joint forest management, watershed development,

organizing women's groups around micro-enterprises, etc. For the first type of NGO the focus was more on commitment of staff rather than on increasing technical competence, while the second type, greater stress was laid on the competence of professionals and to some extent on HRD and staff training.

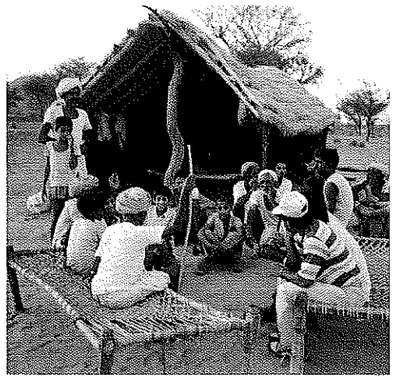
By the early 80s, professionals without a background in social work had entered the NGO sector. From the mid 80s, the NGO sector has grown into a potent voice among policy makers and grass root institutions. The number, size and visibility of NGOs have mushroomed and many NGOs have grown into specialized institutes. By the 90s, NGOs were no longer perceived by government and the public as transient entities, but as long term partners who could perform lead roles in effecting sustainable change. Various categorizations of NGOs have been attempted based on groupings by sectors such as environment, health, women's development, etc; or by size/location into grass root village NGOs at one extreme and urban based research/policy level NGOs at the other.



In some cases planners have tended to treat NGOs as a "fix-it" solution to the problem of ensuring people's participation in larger projects, a perception which is based on documented experiences of some NGO implemented projects. However, the NGO sector in India is not only characterized by great disparity in terms of staff size, professional qualifications, geographical and sectoral areas of work but also by diversity in approaches, scale of financial support, networks and linkages, etc. For every capable and committed NGO, there is another that may be committed but may not be able to implement project activities adequately. Similarly, the capability of an NGO to do good work in one sector does not necessarily translate into its being able to perform equally well in another. Thus few NGOs are equipped to deal with all the diverse development issues and many need strengthening beyond their existing capacity to deliver the desired results. The best approach is to begin with the premise that the concerned community living in the project area will require information, and the NGO will require training and access to technical expertise to be able to perform as desired by project planners.



The Indo-German Bilateral Project works as a match-maker between government departments and NGOs by reinforcing their mutual strengths.



Emphasis on the rural poor.

The ownership of assets varies widely in all watersheds with some of the inhabitants being small or marginal farmers or even totally landless, surviving mainly on wages.

And if the outputs from a watershed management project in the form of increased biomass and enhanced productivity are seen to accrue only to a few richer farmers, the vast majority consisting of the above categories may get alienated. Their situation, especially in terms of disparity, may get worse, and they might even neglect or willfully destroy the resources and infrastructure generated by the project.

The project therefore while planning activities for each RWS makes a conscious effort to address the problems of small and marginal farmers and landless families. It encourages those activities that benefit these groups. One of the major concerns is that the landless not only get appropriate wages in lieu of labor but are also provided additional income generation opportunities from activities such as rope making, mushroom cultivation etc. Conservation works are carried out giving priority to the lands of marginal farmers. And as various community infrastructure and resources like fuel wood, fodder and water from check dams, lift irrigation schemes etc. are becoming available to a larger extent, efforts are being made for sharing these on an equitable basis amongst inhabitants within the watershed.

Environmental protection.

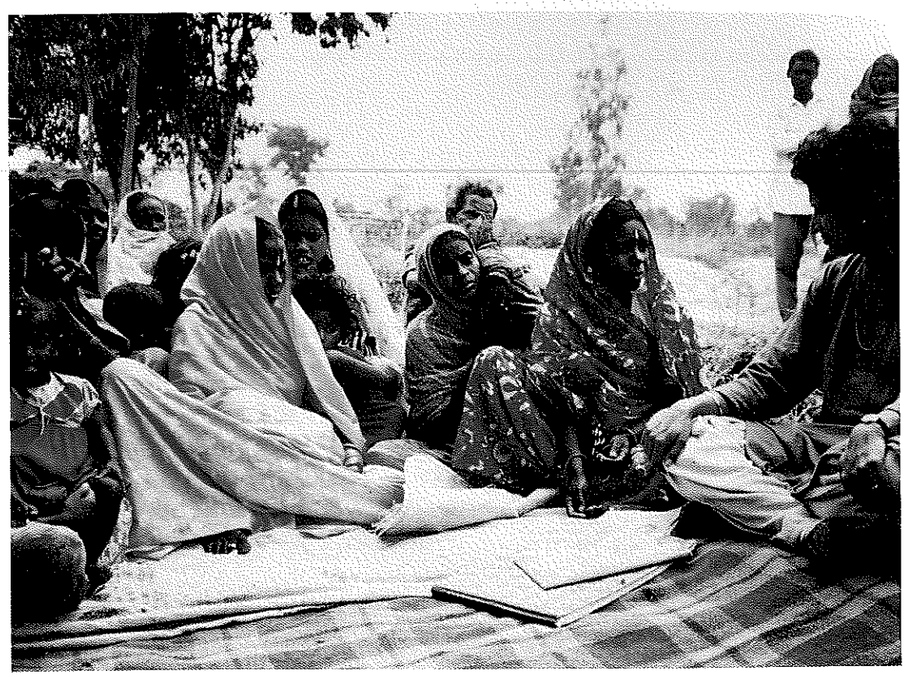
The very basis of the project's activities is the conservation of natural resources viz. the soil, water and the biomass. Each and every activity therefore is scrutinized keeping in mind its contribution to the objectives of conservation.

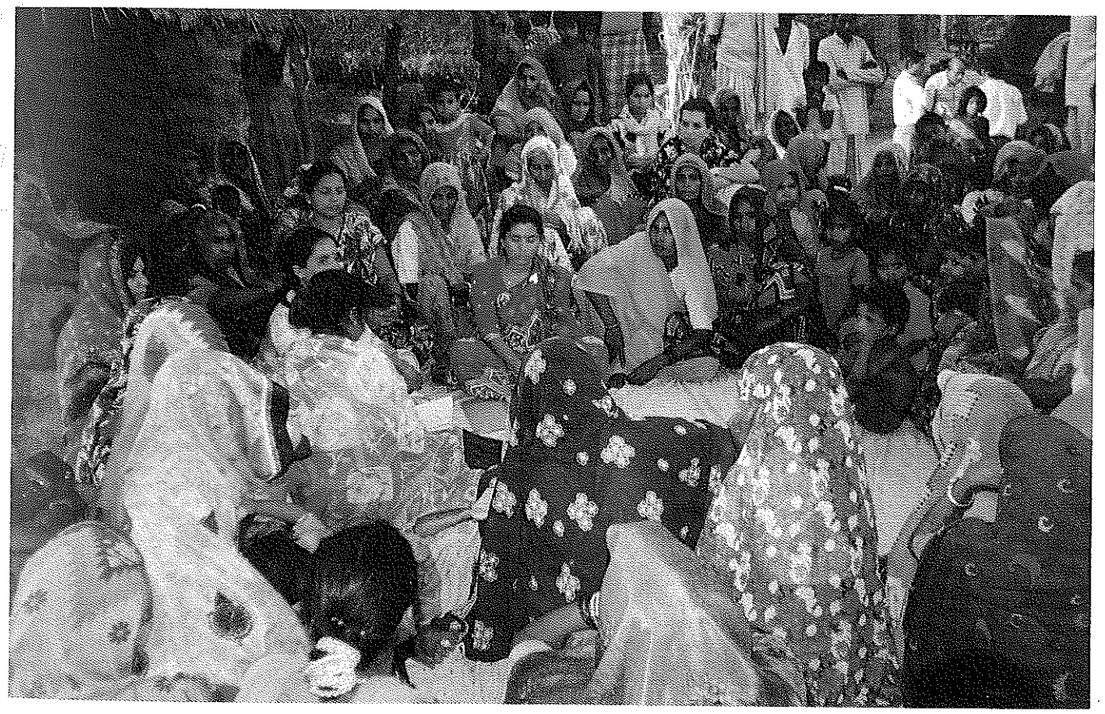
Any activity or practice within the RWS that may provide short term benefits but may cause degradation of the environment over a longer period of time is abstained from. The project's vision is to create an attitude within the RWS whereby the people draw their sustenance from the available natural resources by optimally rather than maximally utilizing these, thus guarding against their over-exploitation. The project therefore strives towards ecologically sustainable development.

Gender in development.

The role of women in development cannot be overemphasized. If sustainable development is to be achieved, women have to be made aware of their rights, abilities and choices.

Women constitute one of the many groups benefiting from the project. The project endeavors to develop resources within the watershed that will improve the lot of women and reduce the burden of the physical tasks performed by them. Rural women have, more often than not, to go many miles everyday for drinking water, fodder and firewood. Efforts are underway to empower women through self-help groups thereby mobilizing their collective strength, to develop leadership qualities and decision making potential and enhance their say in community and family affairs.





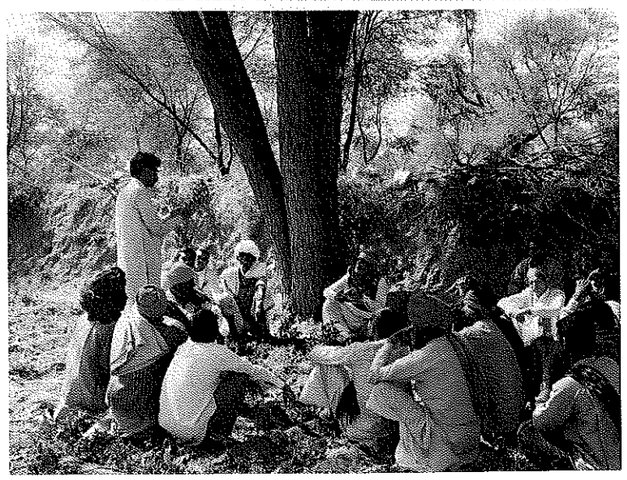
Capacity building and training.

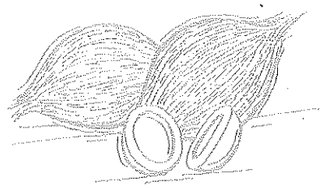
Right from the beginning the project put a lot of emphasis on capacity building of it's partner organisations, as well as dissemination of it's protocols, guidelines and manuals.

Training is conducted on a regular basis in the following fields:
- Hydrological monitoring and evaluation
- Soil and water conservation

The Project also organises through well-known Indian institutes, training in:
- Computer applications
- Remote sensing
- Participatory management of natural resources

Through regular workshops and seminars conducted by the project, in which it's partner organisations have jointly participated, the following issues were covered:
- Gender in development
- Conflict management
- Management of projects
- Book-keeping and accounting
- Participatory rural appraisal techniques
- Promotion of self-help groups
- Income generating activities
- Monitoring and evaluation techniques
- Participatory learning and experience sharing.





Our strategy towards sustainability.

Watershed management activities are being implemented in nine watersheds, which represent different agro-climatic and socio economic regions of India, while:

- enhancing people's participation through joint watershed management by State Government Departments (SGD) and Non-Governmental Organizations (NGO).
- strengthening community based organizations.
- enabling innovative activities in the fields of soil & water conservation.
- improving livelihood of local people.
- monitoring and evaluation of the activities through: impact assessment and hydrological monitoring
- training of SGD & NGO functionaries in relevant fields.

Our approach towards replicability.

In order to create a replicable approach for the Ministry of Agriculture and the various State Departments the following is implemented:

Watershed management activities are carried out jointly by the State Departments and the NGOs.

The State Departments are identified earlier by the Ministry under the RVP/FPR Schemes and the NGOs are selected by the project, according to their experience in the region and in that particular field of work.

The State Departments work mainly on government land while NGOs work on private land, to prevent overlap of activities.

Each organization works in its field of expertise, viz: the State Department in the major soil and water conservation works, plantations etc., NGO in the motivation and awareness raising of the local people, soil and water conservation works and plantations etc. on private lands, training of the local people in income generating activities, community development, credit and savings groups, etc.

The project creates a platform for cooperation and coordination between the two partners (State Department and NGO) and acts as a facilitator between them for the development of the watershed and protection of its natural resources. It also imparts technical advice to both the partners as and when needed.

Besides this, the project is focussing on innovative activities for watershed management. Innovative activities may include everything which ultimately leads to watershed management and integrated sustainable livelihood of the local people.

Ultimately, the establishment of a Watershed Management Committee which will handle the coordination of all development activities in the future, is the long term objective.

Finally, from the lessons learned this way, the project intends to establish protocols for the Ministry of Agriculture and the State Departments, which will enable them to implement and replicate integrated watershed management on a nationwide scale.

funding

For the watershed activities, State Departments receive Indian funds (as per government guidelines) under RVP/FPR schemes and German funds for the innovative activities. The NGOs work only with German funds. It has been calculated that the total funds do not exceed the government's per hectare cost norms.

On an average the following investments occur per RWS:

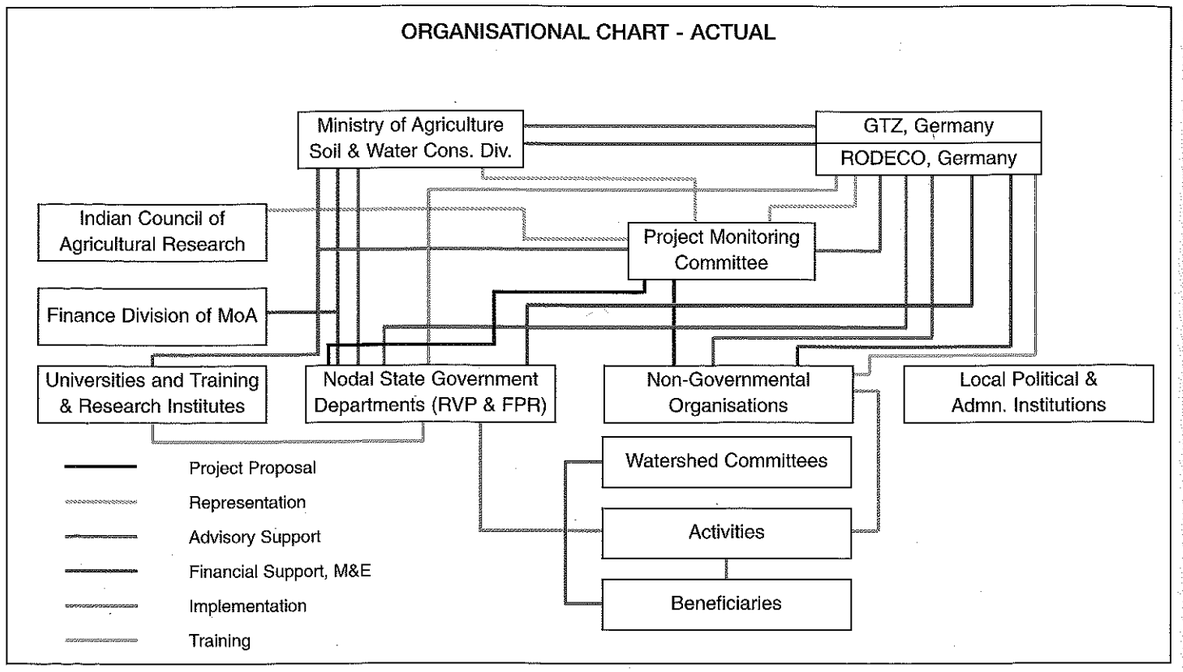
-	Funds from GOI to SGD	-	Rs. 30 lacs
-	Funds from GTZ to SGD	-	Rs. 40 lacs
-	Funds from GTZ to NGO	-	Rs. 25 lacs
	Total	-	Rs. 95 lacs

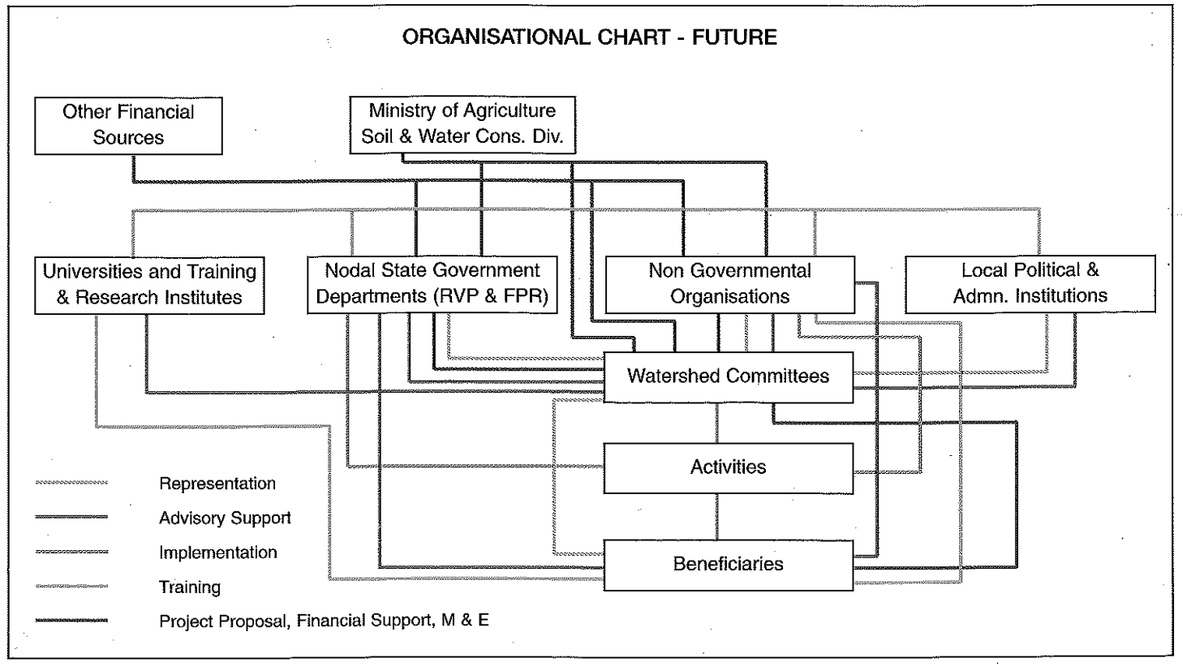
With an average RWS of 2000 ha the total investments are approximately Rs 5000/ha.

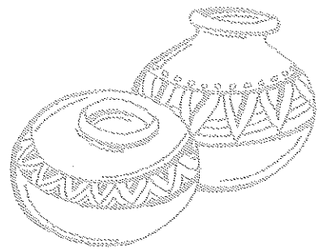
Our guiding principles

The following set of guiding principles were prepared to help the State Government Departments (SGD) and Non-Governmental Organisations (NGO) in developing their plans and proposals and to serve as reference while implementing the RWS programme:

1. The SGDs and NGOs will elaborate jointly on an annual basis a plan of action and keep each other informed on the progress of their work on a regular basis.
2. The SGDs and NGOs must maintain their focus upon soil and water conservation activities that are of central concern and importance to this project.
3. No activity of SGDs and NGOs must cause harm or damage to the natural environment or cause further natural resource degradation.
4. The programmes and activities should also focus on the needs and problems of landless farmers (on a priority basis).
5. Development of networking Self Help Groups with strong participation of women is expected to be a main activity of the NGOs.
6. Assets and infrastructure created by NGOs should be in the name of local institutions, which have strong participation of women.
7. The partner organisations should not promote economically enviable activities which focus on improvement of livelihood conditions and depend primarily on subsidies and sponsorship.
8. Beneficiaries of the programme are expected to make contributions by way of cash, kind or labour. No activities with immediate direct tangible benefits must reach the beneficiaries totally free of costs.
9. State Government Departments and NGOs are expected to work mainly in their field of experience.
10. Within a given watershed, the NGO should begin its activities ahead of the SGD, having a lead time for preparing the community, explaining the objectives and mobilising their participation, preferably 1 year.
11. The activities must be based on principles of sustainability, equity and social justice. The partner organisations must strike a balance between developing community resources and providing individual benefits. Individual benefits to rich farmers that perpetuate the resource gap between the rich and the poor are to be avoided. Greater emphasis should be laid on developing community infrastructure and resources. Access of poor farmers/villagers over such facility must be ensured.
12. The long term perspective of the State Government Departments and Non-Governmental Organisations should be the development of a watershed management committee in which all main socio-economic groups of the watershed will be represented and which will take care of watershed management activities beyond the project period.







Monitoring and evaluation of watershed management projects.

Although many schemes in India are successfully implemented by various organizations, few attempts have been made to constantly monitor and evaluate natural resources management projects.

The schemes of the River Valley Projects (RVP) and Flood Prone Rivers (FPR) of the Government of India have an in-built provision that three per cent of the funds should be utilized for hydrological monitoring. This means that every fourth watershed should be equipped with a Silt Monitoring Station where rainfall, water level, flow velocities and sediment concentrations are to be measured continuously.

However, very soon the authorities in charge face the following challenges:

- lack of suitable and reliable instruments
- lack of guidelines and procedures
- lack of adequate training materials.

Furthermore, as stated earlier watershed management goes beyond the scope of soil and water conservation. A major component of all watershed management schemes deals with improving the livelihood of people while regenerating their natural resources.

Hence, monitoring of watershed management activities means not only observing changes in the physical conditions but also in the livelihood and social conditions.

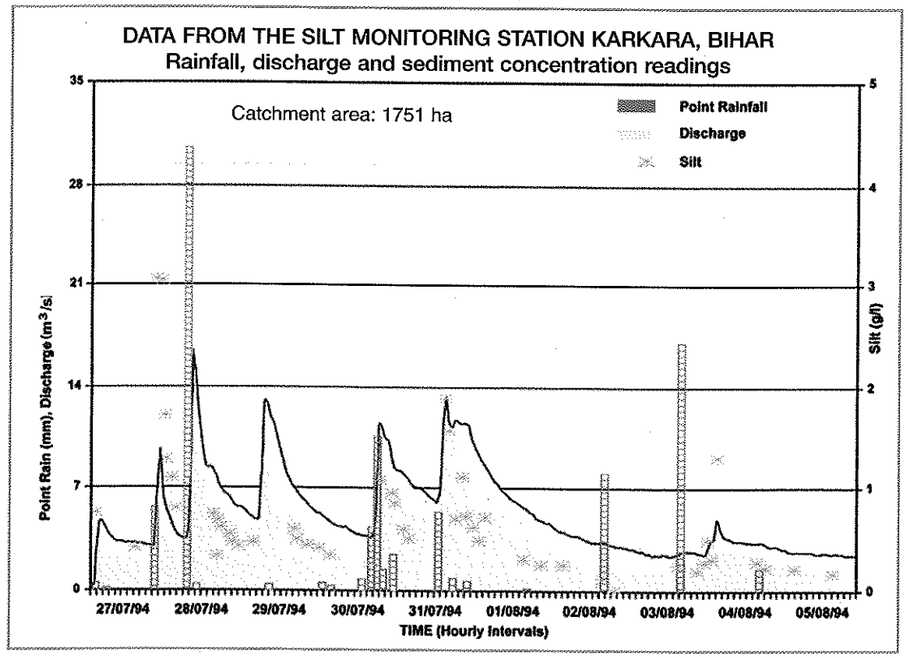
The following nine indicators were developed by the project to create an indicator set for evaluating watershed management activities. Each indicator is discussed in terms of the objectives towards which it measures progress, how it should be implemented in the field, and recommendations for the continued use of the indicator.

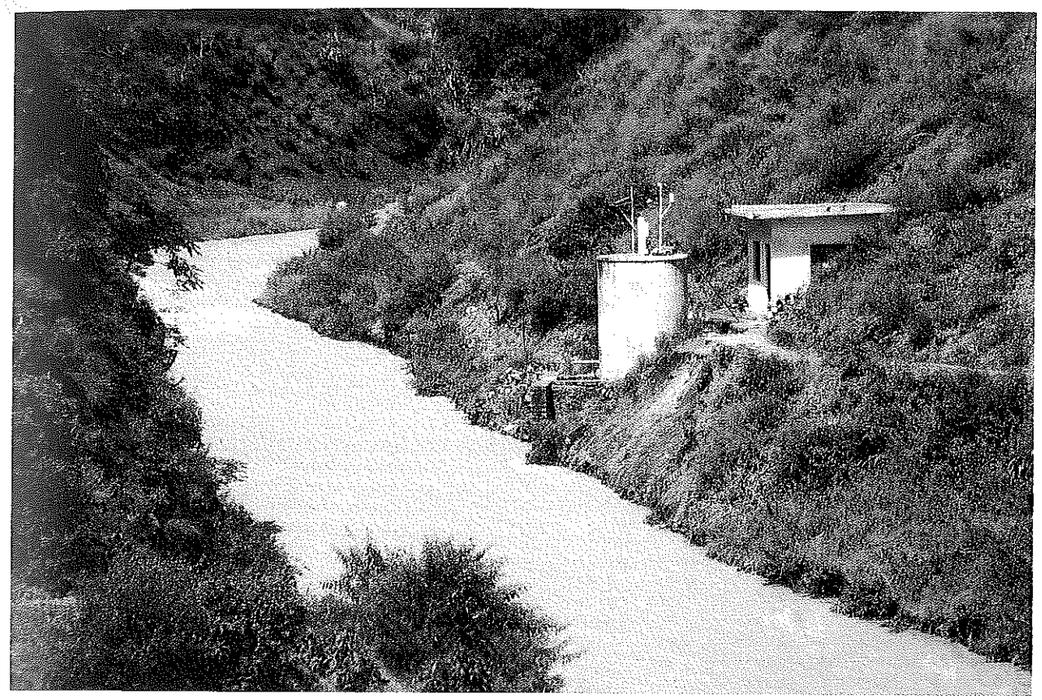
Indicator 1: Soil loss

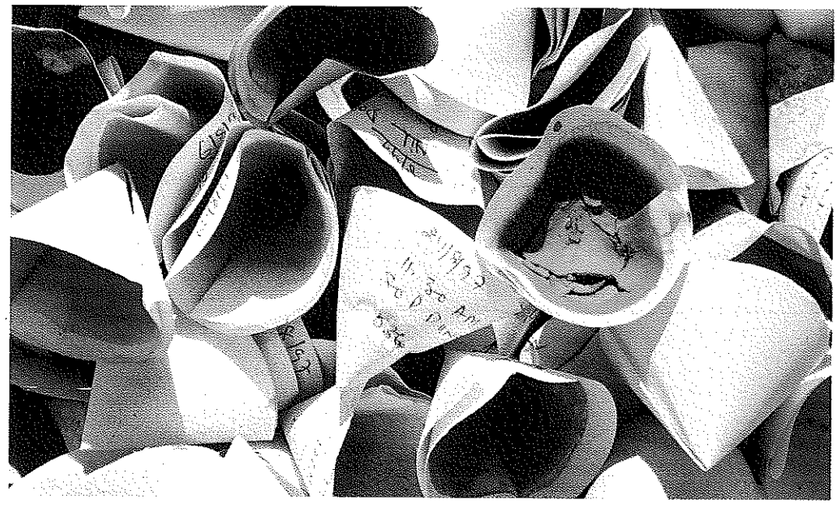
Watershed management projects should have visible impact on the erosion status in the catchment.

TARGET OBJECTIVES

This indicator measures topsoil conservation. The assumption is that increased soil runoff in local streams indicates a higher rate of topsoil loss. In addition, the recharge of ground water resources can be inferred from this indicator—all else being equal, less topsoil being washed downstream implies that more rainwater is being absorbed into the ground, thus recharging the ground water supply. Soil runoff also indirectly measures the extent of vegetative cover—less topsoil runoff implies thicker vegetative cover (vegetative cover prevents runoff by reducing splash erosion and holding soil in place with roots).

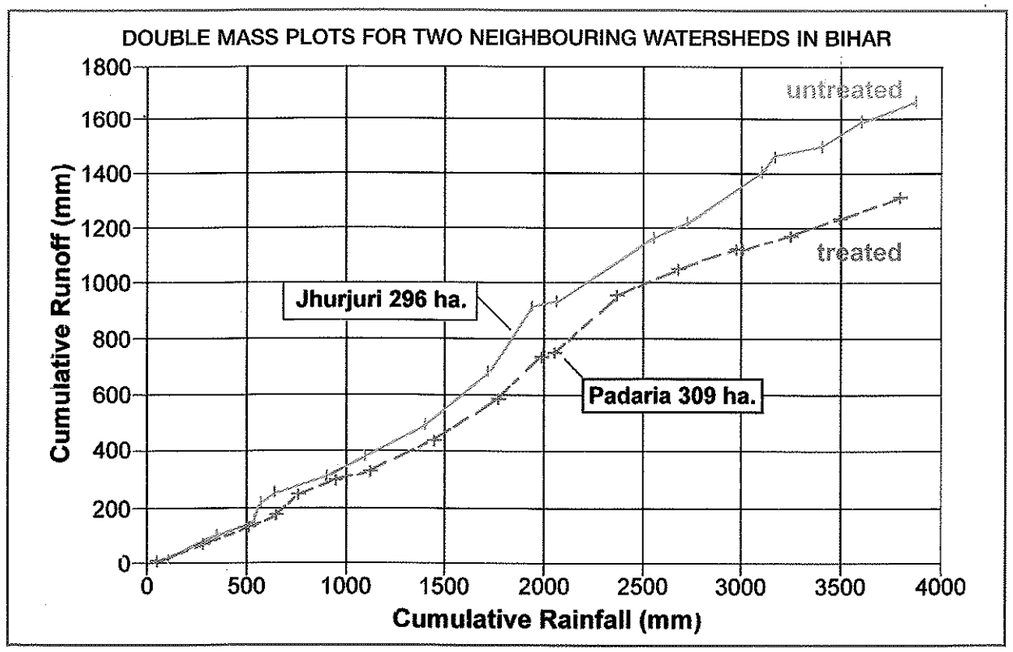






MEASUREMENT PROCEDURES

The ultimate goal of the hydrological monitoring undertaken is to collect data demonstrating: how much water runs off in the stream that drains the watershed for a given amount of rainfall, how quickly this occurs after a rainfall, and how much sediment is carried away by the stream. To do this, a crew of silt observers must work around the clock to gather data on rainfall in the watershed, in addition to measuring depth of the stream at the drainage point, stream velocity and sediment concentrations in the stream. A detailed description of the procedures is listed in appendices 3-5.

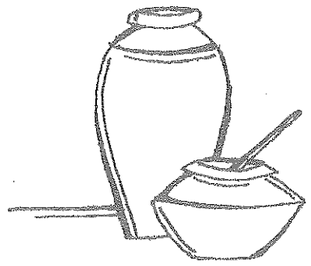


In order to demonstrate changing runoff rates, this data must be collected over very long periods of time (not less than ten years). Successful anti-erosion treatments will result in decreased levels of discharge (meaning more water soaks into the ground). If this is the case, then the discharge that does occur will be spread out over a longer period of time (i.e., the water drains more slowly). In addition, silt loads will be decreased.

OUTLOOK AND RECOMMENDATIONS

This indicator has many strengths. It produces valid, reliable data about soil (and water) conservation. It is also extremely responsive and sensitive — improved soil conservation will be evident in the fine-grained measurements taken during the very next rain. In its favour, very few (perhaps only one) monitoring stations are needed to take measurements for the area being treated. In addition, once the monitoring stations are in place, the measurements can be carried out by relatively unskilled labour. Finally, if meticulously carried out, monitoring this indicator can produce a very objective and highly quantifiable database.

Unfortunately, this indicator is only suitable for evaluating pilot projects, not for monitoring projects being implemented on a large scale. The indicator is very labour intensive. In an ideal situation, measurements must be taken every hour, twenty-four hours of the day, three hundred and sixty five days of the year. In order to carry the measurements out properly, this indicator also requires the use of some expensive equipment — instruments to measure rainfall, stream depth and stream flow. Given the remote, rural setting of most watershed programmes, maintenance of these can be difficult. Poor maintenance and/or lax personnel will quickly corrupt databases. As with other scientifically measured indicators, this indicator also requires the use of controls.



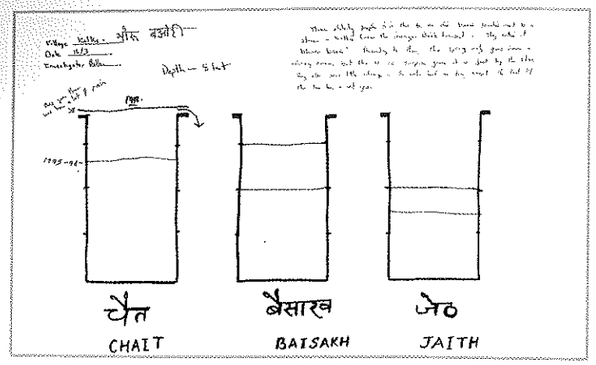
Those desiring an indicator more suitable for monitoring large-scale projects at the replication stage might want to explore the use of remote sensing (i.e., satellite imagery). A series of satellite images taken over time can be compared, to chart changing land-use patterns. Since satellite images (old and new) are often available (perhaps through the Remote Sensing Department of the local government) remote sensing would be fast and inexpensive. There may, however, be difficulties in obtaining such images if there are national security concerns involved. Such a method would also still require the creation of a computer model to interpret the images, and initial field visits to help create a key to the satellite images.

Indicator 2: Ground water

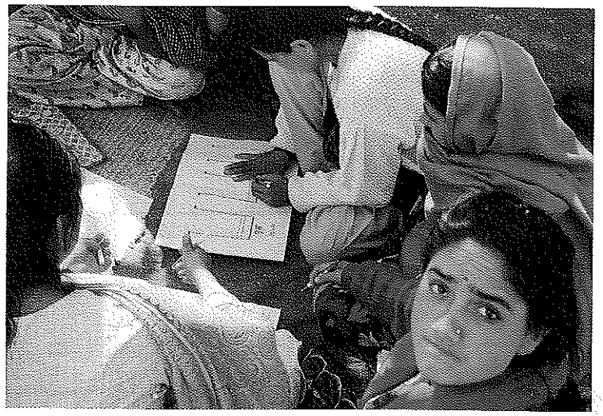
Successful erosion control allows surface water to infiltrate and thus recharge the aquifer.

TARGET OBJECTIVES

This indicator measures ground water conservation. If ground water levels are maintained (or even augmented), then ground water resources are being sustainably utilised. In addition, this indicator indirectly measures topsoil conservation. All else being equal, a higher level of ground water is at least partially the result of less (or slower) water runoff. This, in turn, results in lower levels of topsoil erosion. Water table levels are also an indirect measure of vegetative cover. As previously stated, vegetative cover prevents runoff, thus recharging ground water by checking splash erosion and by holding soil in place with roots. If ground water levels are being sustained, constant or increasing vegetative cover may be responsible.



GROUND WATER AVAILABILITY IN A LOCAL WELL IN HIMACHAL PRADESH



MEASUREMENT PROCEDURES

A water level sensor should be used to measure the depths in village wells. Such a device is accurate up to less than a centimetre. Measurements could be taken in local wells or special monitoring wells could be dug. While the former is less expensive, it is less reliable. The problem with such a low-tech methodology is that local people disturb the level of water in wells by drawing water from them. This problem could be circumvented if readings were taken early in the morning, before the day's first water is drawn out.

Since water levels in a well fluctuate from day to day and month to month, readings need to be taken frequently, for the duration of the programme and beyond, as is done in the Silt Monitoring Stations. As with the other extractive indicators, controls must be used. Taking the required number of readings will be expensive in terms of labour and, as mentioned, reliability is a problem.

Programme engineers need to select where in a watershed the ground water level should be monitored. Their decisions will be based on the knowledge of where programme impacts are expected.

Indicator 3: Height-for-age

This indicator reflects the long-term health status of young children.

TARGET OBJECTIVES

Anthropometric indicators are generally broken into three sub-indicators—height-for-age (otherwise known as stunting), height-for-weight (wasting) and upper arm circumference. Height-for-age is selected here as the single best anthropometric indicator for health because it registers long term status.[1] This is because growth cycles which are missed due to periods of poor health, cannot be recovered. This growth is simply foregone for ever. Children who have foregone growth cycles will register as significantly shorter than statistically established averages. Height-for-weight and arm circumference both give information about current nutritional status only. The stunting and wasting data have the added advantage of being objective, so they are less subject to criticism of bias.

Height-for-age is also an indicator of wealth for the very poor. The very poor often spend any increased wealth on food, which will register as increased height. Following the same logic, distributional analyses of height-for-age along gender and class lines are indicators of gender and economic equity. Finally, height-for-age is indirectly a measure of soil and water conservation—in a rural community, improved health is often linked to the raw materials of farming.

MEASUREMENT PROCEDURES

Children of known ages must be measured for height. Techniques for doing this are well documented and easily available, as are the international standardised tables that detail the distributions of height-for-age for children of different ages. A sample can be taken from several villages (this must include control villages), randomly or in terms of representativeness. Children of particular age groups are measured and their ages noted. Since standardised tables of height-for-age measures are only applicable internationally up until puberty, younger children must be the ones measured.

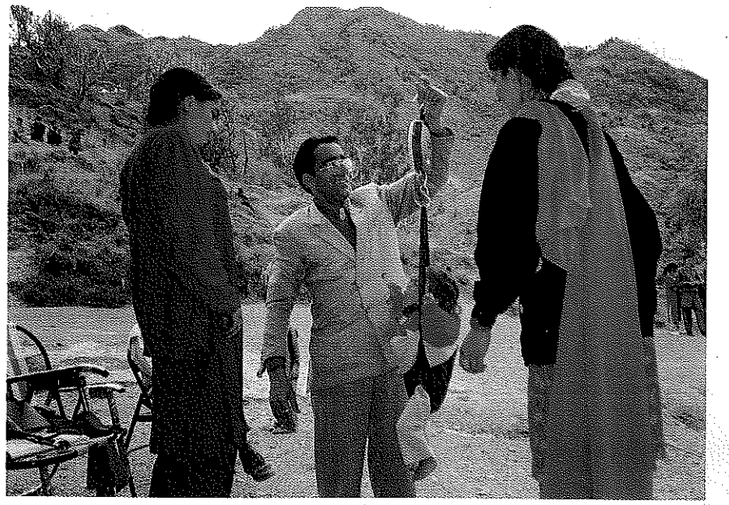
In order to encourage people to bring their children (and in the interest of giving something back to the community) a local doctor should be hired to accompany the team on its site visits. The doctor's presence undoubtedly increases the level of participation in the study.

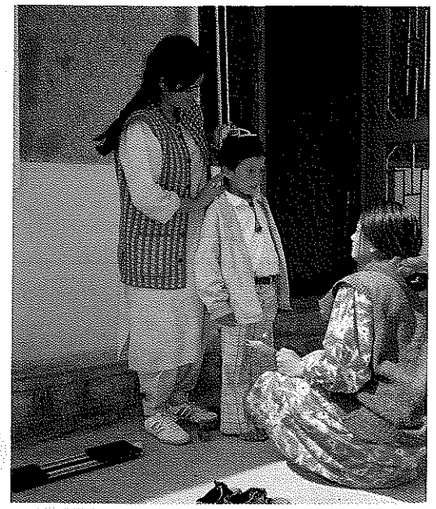
The data collected is then analysed. Stunting is determined by counting the number of children who fall below two standard deviations of accepted norms. Gender parity is determined by analysing how the measurements for female children fare in comparison with males. Economic equity is determined by looking at the overall spread of the scores and if the standard deviation of the scores is high, equity is low.

Finally, future evaluations need to set aside control groups. It may be more difficult to convince people in untreated areas to bring their children for measuring. The presence of the doctor may compensate for this.

OUTLOOK AND RECOMMENDATIONS

Of all the indicators tested, this one has the potential to be the most powerful, especially when considered in terms of resource constraints. For a relatively small investment of time and monetary resources, an evaluation team can gather a fine-grained database that is rich in information on nutrition, social equity and gender equity. (For almost no added costs, the evaluation team can also take measurements

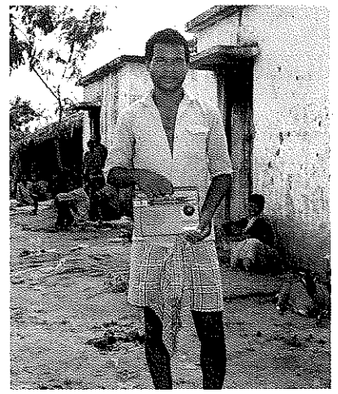




for wasting, which offers added information about the same issues.) Only a few pieces of equipment need to be purchased (costing less than Rs. 12,000), and the executing staff do not need to have any special skills. The study can be carried out quite quickly (half a day per village), while freely available software (i.e. EpiInfo6 from the HS Center for Disease Control) makes analysis quick and easy.

This indicator does have some weaknesses, however. It is not a responsive indicator—changes in the level of community health will take several years to show up in anthropometric surveys. In addition, height-for-age will not be a useful indicator of health or wealth in those communities that are already relatively healthy and wealthy (since human height eventually approaches physical limits). Finally, like all extractively executed indicators, controls are necessary for the proper implementation of this indicator. Nevertheless, the continued use of this indicator is recommended without any reservations.

1. According to international organisations like the World Health Organisation, this is a valid measure of nutritional status. Distributions of data on nutritional status can be examined to gain information on gender and social equity too. Unless an evaluation team has sampling difficulties (and if they follow the procedure discussed above, they will not), this is also a reliable indicator. The stunting and wasting data have the added bonus of being objective, so it is less subject to criticism of bias.



Indicator 4: Ownership of consumer durables

Once livelihood of people improves, the ownership of basic consumer durables will increase.

TARGET OBJECTIVES

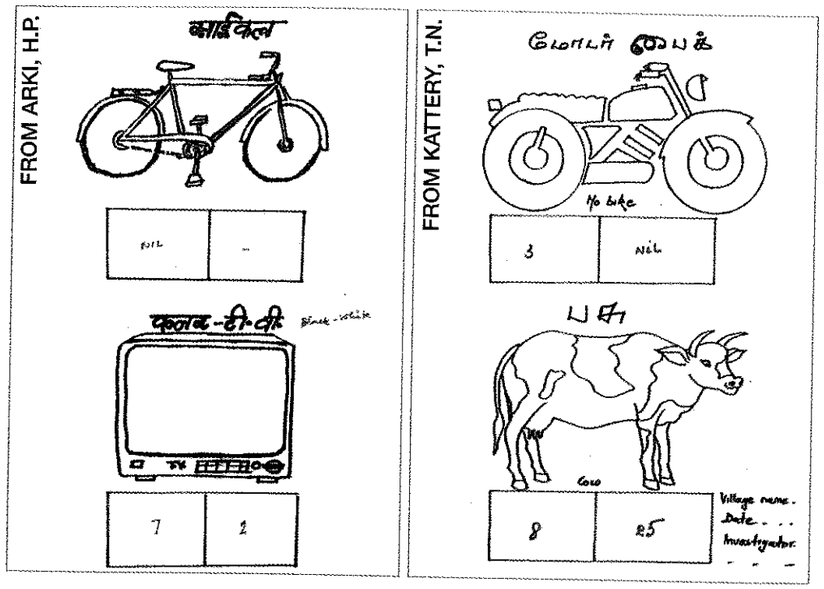
This indicator measures the level of wealth in a watershed. The assumption is that as general levels of wealth increase, the local population will purchase more consumer durables. The ownership of various, highly visible consumer durables is used as an indicator for several reasons. First, consumption levels of non-durables (alcohol comes to mind) are difficult to determine as people often do not monitor or remember their consumption rates.

The second reason why this particular indicator has been selected is because people often wish to conceal their personal income. Highly visible consumer durables, especially the larger ones such as farm animals or bicycles, are difficult to conceal so they can be easily counted. The distribution of consumer durables is then used to measure economic equity.

MEASUREMENT PROCEDURES

Ownership of particular consumer items can be measured by a household survey or through a more participatory approach. The latter is recommended because it is faster, cheaper and more likely to uncover the truth. Obtaining figures of statistical significance does not require that the entire watershed be surveyed. Depending upon the number of villages, a sample of villages can be surveyed. If the villages in the watershed are very different in terms of socio-economic makeup, representative villages could be non-randomly selected. A skilled practitioner of participatory rural appraisal techniques can assess the levels of ownership of various consumer durables in the village in a PRA session lasting no more than two hours.

The consumer goods surveyed need to be selected with local culture and levels of wealth in mind. Appropriate consumer goods to survey will be those that local people aspire to buy, but are just out of their reach. The goods surveyed must also be of the kind which others in the village would be readily aware of (e.g. a bicycle, more so than jewellery).



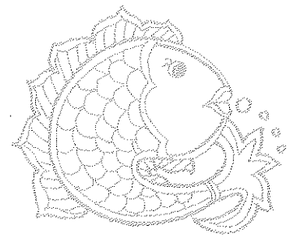
PICTURES HELP THE SURVEY OF CONSUMER DURABLES

Prior to conducting evaluations, partner organisations were asked to help the evaluation team assemble a list of consumer durables that a few people in the watershed possessed, but most aspired to own. The beneficiaries were told that when the evaluation team arrived, the team would survey these items in the selected villages.

In order to develop the best possible survey list of consumer durables, a group of local people must be consulted. Evaluators must look for items that few own but many would aspire to own, given a modest increase in wealth. Such items will help evaluators measure change over time. If almost everyone in a village already owns an item, it is useless as a survey item. For example, if a village is already saturated with radios then it probably still will be when a second survey is executed several years hence. If this is the case, evaluators will not be able to register changing levels of wealth, even if these have occurred.

Evaluators would be well served to survey between twelve and fifteen items. This number is still a bit large, but the original list needs to be longer. This is because some items may need to be withdrawn from the list during successive evaluations. For example, many people in Kattery RWS presently want to own a mixie (blender). Five years from now, when a follow-up evaluation is conducted, the mixie may have been superseded by a superior tool that does the work of a mixie and a grinder. If this were to happen, it would not make sense to continue surveying for mixies and the item should be omitted.

The lists of durables should then be turned into pictorial surveys by an artist. In such a survey, each item on each survey is represented by a separate picture. This was done both for illiterates as well as to stimulate discussion. In case the pictures were ambiguous, a caption was also included, in both the local language and in English.



Since it was felt that reconnaissance visits be dispensed with in the future, it is important that the evaluation team be prepared to construct these pictorial surveys in the field.

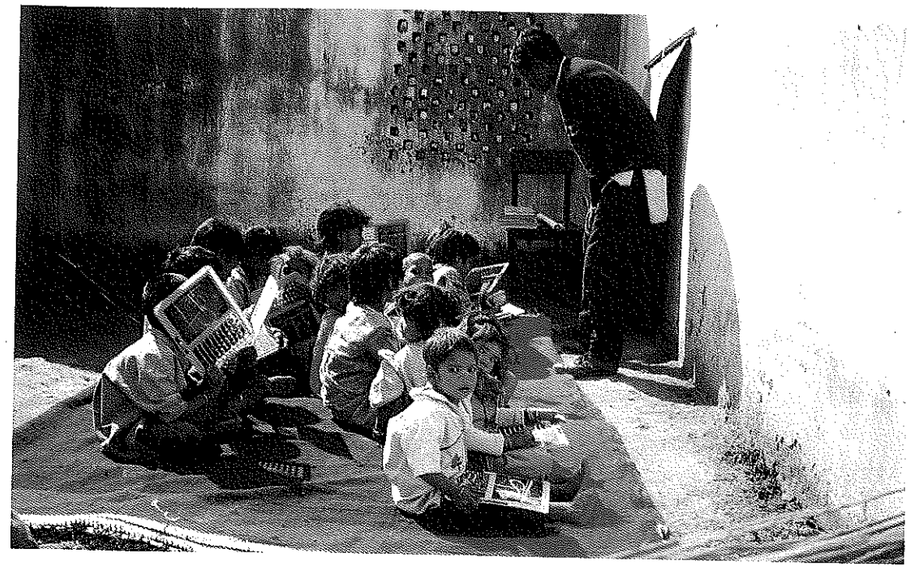
These surveys are used during the participatory sessions. During the discussions themselves, it works out best if the surveys are reserved until the end, when people are loosened up enough to talk about monetary issues. The team member leading the discussion asks the group to fill in the survey out together. They are asked to debate, one item at a time, how many of each are presently owned by the villagers. This number is then recorded, by one of the group members, in the left-hand box under each picture. In order to measure changing rates of ownership, time series data on changing ownership levels of consumer durables should be collected through periodic visits, several years apart.

When all the durables had been fully surveyed, the group should then be asked to discuss the reasons for change. For example, why do fewer people own cows than they previously used to? How is it that there has been an explosion in the ownership rates of kitchen implements like grinders and mixers? If they answer that people have more money now, they should be asked about the sources of the new-found wealth. Future evaluations should also use control groups to help pinpoint the mechanisms for changing levels of wealth.

OUTLOOK AND RECOMMENDATIONS

This indicator is highly recommended for future use. It allows evaluators to gather data on a very delicate issue (wealth). It is extremely inexpensive to implement, requiring only the purchase of poster paper and coloured pens. It also takes little time to implement—no more than an hour per village. The skills necessary to execute the indicator (the ability to lead a PRA in the local language) are somewhat sophisticated, but they are the same as the skills required for some of the other indicators in this set.

In addition, this indicator should be a valid measure of wealth for all but the poorest people. Given the nature of information obtained in group discussions, this data is also quite reliable. Reliability will, however, start to falter if the village is too large or the item surveyed for is too pervasive. For example, Mellodyarahatti in Kattery had almost seventy households. It was difficult for the groups to come up with accurate estimates of ownership for widely held items such as mixers.



To its detriment, this indicator is not very responsive—it takes time before beneficiaries transfer new found agricultural wealth into consumer goods. In addition, this indicator will not measure changes in wealth at the very lowest rung of the economic ladder. Those most in need will first spend increased resources on food. After that, they will expend their resources on shelter and debt repayment. This problem is taken care of in part by using this indicator in conjunction with an anthropometric indicator (see the previous section). A survey of consumer goods also fails to register productive investment that come with increased wealth (e.g. the purchase of fertilisers).

Indicator 5: School attendance

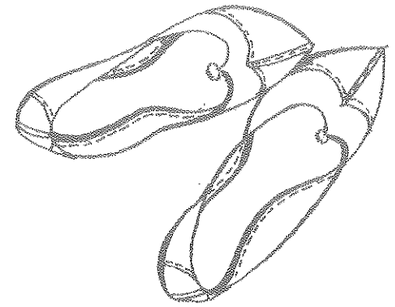
This is a proxy measure for levels of education. In all but the worst cases, children become more educated the longer they attend school.

TARGET OBJECTIVES

Given that very poor people do not send their children to school, this is also an indicator of wealth—as the poor acquire more resources, they will send their children to school. The distribution of attendance data along gender lines also serves as an indicator of gender equity. Once again, this is an indirect indicator of soil and water conservation—in a rural community, the rising level of wealth necessary to attain higher levels of education is in most cases linked to the raw materials of farming.

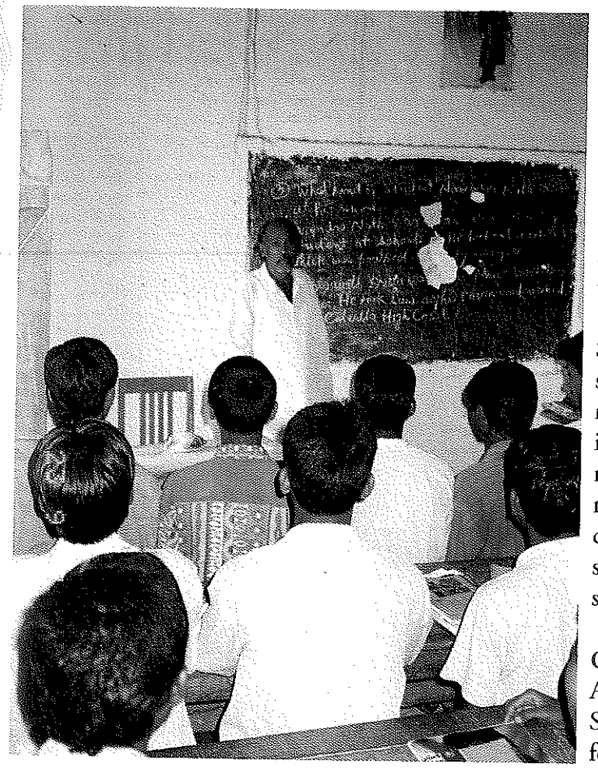
MEASUREMENT PROCEDURES

Members of the evaluation team should take a single day's attendance at all the schools that serve the selected villages. This would be accomplished by simply arriving (unannounced, if possible) at the schools in question, and requesting a head count. In the spirit of participation and sharing data, attendance figures should be discussed with the principal of the school at the time of collection. This person can offer an interpretation of the data.



Almost all of the principals with whom team members spoke, were quite helpful. After asking about the nature of the evaluation, many simply opened their attendance registers and let the team collect the needed information. Others went to their record keeping area and supplied the information to the team. This latter method of operation highlights the weakness of our alternative method — data supplied to the evaluation team by school administrators may be subject to tampering. (The same is true, probably even more so, of enrolment figures. This was the reason why attendance figures were preferred to enrolment records in the first place.)

Although the evaluation team did not actually carry out the head count method, visiting schools in Arki and Kattery gave rise to a concern about the invasive nature of the of the headcount method. This problem was not evident when this method was first developed by the principle investigator after his visit to Karkara RWS, Bihar. In Karkara, the schools were fairly small and informal as one might imagine village schools in a poor rural area to be. The secondary schools visited in Arki and Kattery were, however, much larger and more formally run. Had team members asked, the headmasters of these schools may have bristled at the idea of disrupting their classes to count the number of students, especially when the attendance had been already taken in the morning.



So both the methods of collecting attendance data have shortcomings. Head counts are invasive and official records can be falsified. If the local schools are small and informal, the head count method is recommended. If not, evaluators can attempt to be present during the normal morning attendance session (to do a parallel count). If neither of these options work, evaluators should use the daily attendance records available at the school.

OUTLOOK AND RECOMMENDATIONS

Attendance is certainly a valid measure of schooling. School attendance is also a fast, cheap and easy indicator for measuring education. It requires very little time, no