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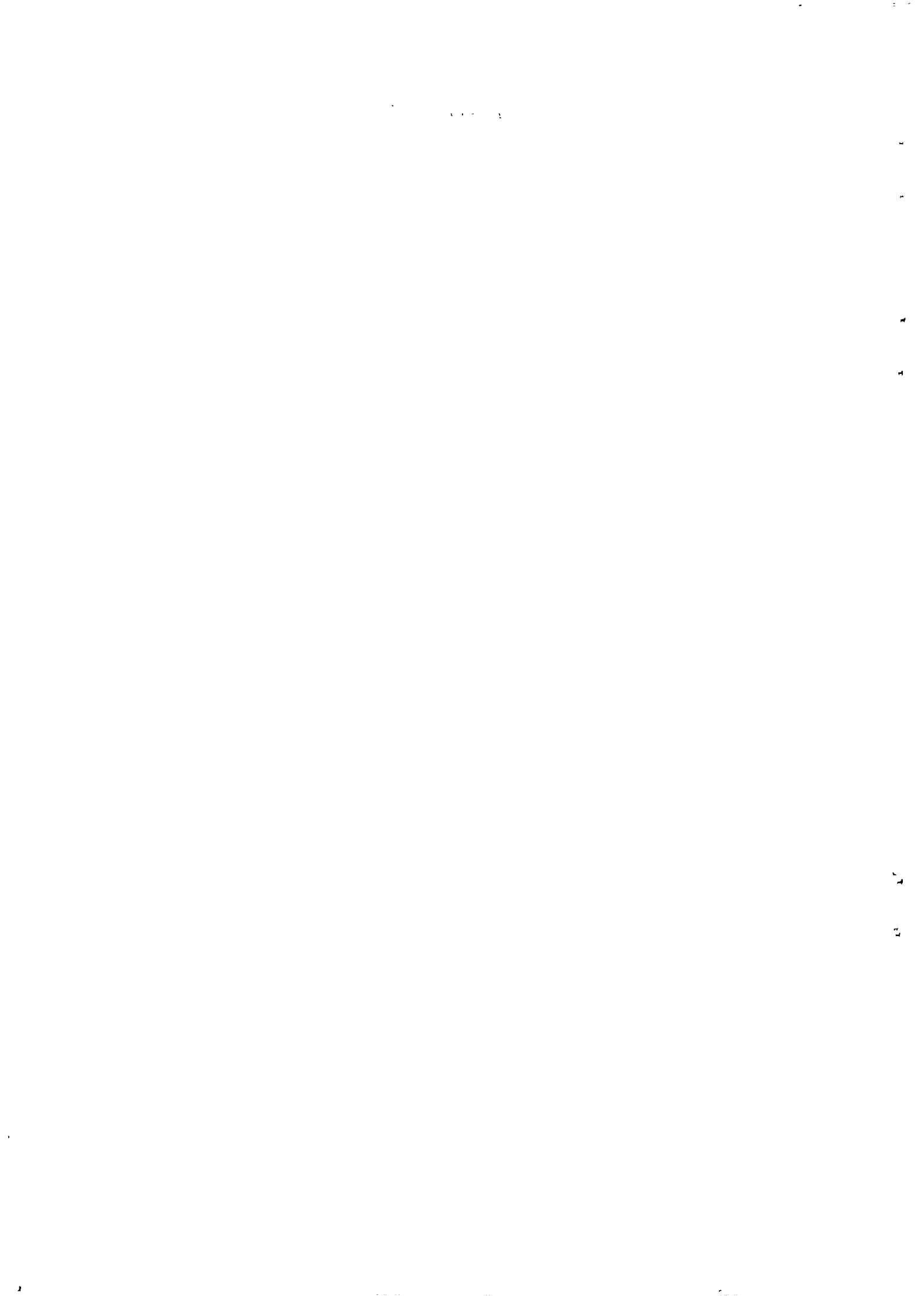
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INSTITUTIONAL DEVELOPMENT
IN THE
INDO-DUTCH RURAL WATER SUPPLY AND
SANITATION PROGRAMME
A DISCUSSION PAPER

Ministry of Foreign Affairs,
Directorate General International Cooperation
South Asian Country Section
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Abbreviations and Acronyms

CHAI	Catholic Health Association India
CP/HE/SAN	Community participation, hygiene education, sanitation
CP/WI	community participation, women's involvement
DGIS/DAL/ZZ	Directorate General for International Cooperation, Bureau South Asia
DGIS/DST/TA	Directorate General for International Cooperation, Directie Coördinatie Sectorprogramma's en Technische Advisering
ESCAP	United Nations Economic and Social Commissions for Asia and the Pacific
GWSSB	Gujarat Water Supply and Sewerage Board
IHE	Institute for Hydraulic Engineering
INDEV	institutional development
INSTRAW	United Nations International Research and Training Institute for the Advancement of Women
KWA	Kerala Water Authority
MEP	Minimum Evaluation Procedure
MIS	Management Information System
NA-project	Netherlands' assisted project
NAPSU	Netherlands' Assisted Project Support Unit
NGO	Non-Governmental Organization
O&M	operation and maintenance
PRED	Panchayati Raj Engineering Department
RSM	Review and Support Mission
RNE	Royal Netherlands Embassy
RWS	rural water supply
SEU	Socio-Economic Unit
UPJN	Uttar Pradesh Jal Nigam
VAC	Village Action Committee

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Foreword

Since more than ten years, a fruitful cooperation exists between the Governments of the Netherlands and India in the rural water supply sector. Initially, cooperation consisted of construction of rural drinking water supplies. Gradually, the approach took on a more integrated character, in which rural water supply, community participation, involvement of women, health education, sanitation, and in some cases income generation for women are part and parcel of the overall programme.

In the course of this process, organizational and human development aspects gained importance. Workshops, seminars and training programmes have been organized to improve the execution of projects on the basis of an integrated approach.

The Netherlands Government intends to continue their support to human resource development activities in the context of the current projects. Together with the Indian Government and other Indian partners involved in the projects, they would like to review the needs and interests for such activities and jointly establish the priority areas in which support could be best provided.

To provide a basis for the discussions DGIS has requested the IRC International Water and Sanitation Centre, to prepare this paper, taking into account the progress reports and evaluations of water and sanitation projects in India. The paper gives an overview of institutional and human resource development problems and activities in these Indo-Dutch integrated rural water projects.

The paper lists ten major areas in the fields of human and organizational development for possible financial and technical support. Activities are primarily focussed on the Indo-Dutch integrated rural water supply and sanitation projects. However, it is expected that they will have a spin-off effect to other project areas.

R.H. Buikema,
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Executive summary

The present discussion paper has been prepared on request of the South Asian Countries Section of the Directorate General International Cooperation (DGIS/DAL/ZZ). Its aims are to initiate discussions on how human and institutional development could get more support as part of the integrated Indo-Dutch rural water supply projects, and what the priority areas are for such support.

Based on an analysis of existing activities and reported gaps, as documented in the project progress reports of the Review and Support Missions, ten possible areas for further cooperation have been identified. These are:

1. Organizational adjustments in water sector agencies;
2. Strengthening of human capacity building and training for rural water supply;
3. Strengthening of maintenance and maintenance financing;
4. Adaption of task descriptions and manpower development for the integrated project approach;
5. Capacity building in hygiene education methods and evaluation;
6. Knowledge exchange on rural sanitation strategies;
7. Adaptation of project preparation and design;
8. Development of monitoring and evaluation systems;
9. Knowledge development and information exchange within and between projects;
10. Role of support structures.

In each subject area, specific suggestions are made for possible cooperation activities. With regard to *organizational adjustments*, it is proposed to make available an organizational advisor, who together with representatives of the water agency would analyze organizational bottlenecks in the implementation of rural water projects, and help formulate and implement problem-solving action.

In the area of *human resource development*, it is proposed to expand the existing training activities (IHE course, workshops, seminars, study tours) with (a) short in-country courses and (b) strengthening of in-house training programmes. Short courses would be held either per state or jointly for several states, and would address specific training needs as emerging from the projects. The report already gives a number of possible topics for such courses, including low-cost water treatment and project evaluation.

Strengthening of in-house training could focus especially on training of trainers on community participation and involvement of women, and on enhanced management training for technical staff.

On *maintenance and maintenance financing*, the paper proposes more guided experiments with community managed systems or parts of systems, and with community-based financing.

Another institutional development area requiring attention is the adaptation of *task descriptions and manpower development* for participatory water and sanitation projects. Use of participatory methods and cooperation with NGOs have changed technical working procedures in the field, and also affect project timing, scope, coordination structures, etc. Nor are NGOs available everywhere to expand and sustain community participation and involvement of women beyond the pilot phase. Experiences and development in these areas are not yet reflected in the formal organizational structures, thereby risking that there is no feedback of developed knowledge and lessons into the formal organizational set-up, staff recruitment and training programmes of the water agencies. The paper therefore suggests the temporary addition of an organizational specialist to the RSMs to look at these issues in particular.

For *hygiene education*, the paper urges for training on recent developments in participatory learning methods and techniques, and on evaluation on cost-effectiveness of various health education strategies.

In *sanitation*, there is a growing need to exchange information between the various programmes on strategies that produce lasting and widespread results at affordable costs. Proposed is therefore a joint conference on sanitation in the Indo-Dutch projects and its implications for institutional development at village and agency level.

Building of human and organizational capacity is further indicated for the preparation of *integrated project proposals and plans*, which does not yet take place in all projects. This could include, among others, assistance in carrying out integrated feasibility studies in the field, and the preparation of joint project documents. Other activities in this field would be the review of project design criteria, training of local consultants involved in baseline studies and design, and the preparation of general guidelines on the basis of current experiences.

Development or improvement of in-house *monitoring and evaluation* of rural water supply, sanitation, community participation and hygiene education, is another priority area for institutional development. Selected Indo-Dutch projects could have a better pilot function in this respect. For monitoring, the paper recommends the continuation and strengthening of present efforts for integrated, community-based monitoring. For evaluation, it suggests training workshops in participatory evaluation, and building of human and organizational capacity for evaluations as a management tool within the engineering agencies themselves.

A further area for institutional development concerns a more structured building up and exchange of *knowledge and information* on participatory rural water supply, sanitation and hygiene education projects. Proposed are Joint Meetings of Indo-Dutch project staff from all state programmes, and a fact-finding mission from an information specialist to assess current information needs and resources on integrated rural water supply, and recommend possible action.

A final topic for discussions on institutional development in the Indo-Dutch projects concerns the role of the *support structures*. Suggested are that, over time, the bi-annual missions of the review and support missions are gradually replaced by other forms of communication and support, such as inputs into training and other institutional development activities. correspondence and exchange and review of documents.

With regard to the Netherlands Assisted Project Support Units, which, under different names, function in three of the five States, the paper suggests that, in time, these could continue in a part-time function, in which they would combine monitoring activities on behalf of the Dutch Embassy with periodic advice to the implementation projects. For the other part of the time, the NAPSUs could either have the same monitoring and advice function for other Netherlands' assisted development projects in the area, or make their expertise available to other water projects and for training.

1. Introduction

1.1 Definition of institutional development

Institutional development has recently been defined as follows: The strengthening of existing institutions and organizations and their linkages at all levels, and the creation of new ones, so that both short- and long-term project objectives are realized and efforts, results and benefits will continue also after donor support has been phased out¹.

Ultimate goal is to enlarge the ability of the institutions involved in rural water supply, sanitation, community participation and hygiene education to solve problems and provide services which are technically and financially sustainable, are appreciated and used by all and lead to measurably improved hygiene conditions and practices².

1.2 Scope of activities

Institutional development is thus not limited to state engineering organizations, but involves all actors and levels whose joint efforts and linkages are needed to bring about these objectives (Fig. 1). At the same time, activities as discussed in this paper are meant in the first place to strengthen the integrated Indo-Dutch rural water supply and sanitation projects.

However, the purpose is that all institutional development activities are set up as replicable programmes which can be repeated also in other districts with similar conditions and projects. Once proved beneficial in selected Indo-Dutch projects, they can thus be expanded to the overall programme, with, where suitable, additional financial support from the donor.

1.3 Contents of programmes

Content-wise, institutional development programmes are often put on a par with manpower training. However, although training can be an important element, institutional development is much wider and involves at least six different areas³:

- (1) development of management capacities from village level to the organizational top of implementing agencies;
- (2) adaptation of project preparation, implementation, maintenance and support systems, including new and tested procedures and materials (manuals, forms, checklists);
- (3) provision of physical inputs, such as computers and computer software, office equipment and training facilities;
- (4) development of human resources, including manpower planning, training plans, manpower training and performance evaluation systems;
- (5) management of human resources, including clear definition of authority, responsibility and accountability, and personnel policies which reward merit, provide career paths and attract and retain motivated staff;
- (6) making of structural and organizational adjustments within and between organizations, e.g. for coordination and inter-agency cooperation.

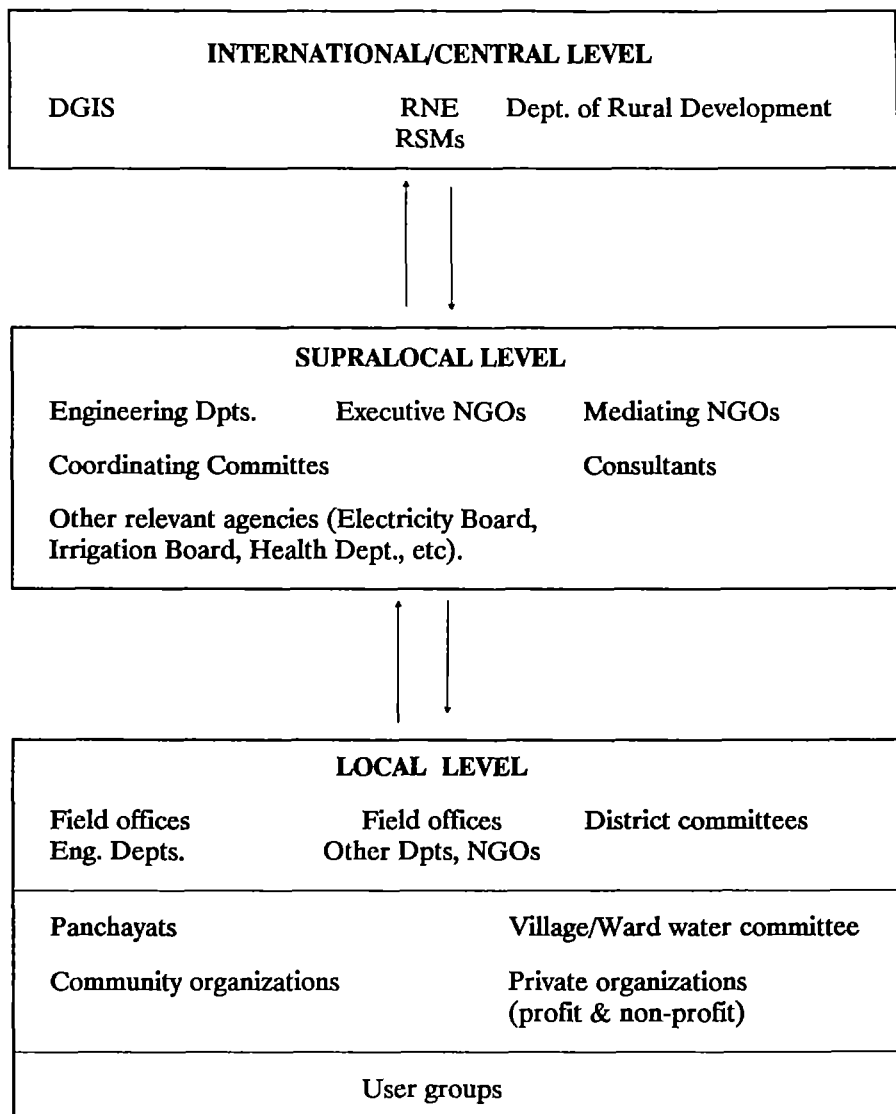


Fig. 1. Levels and organizations involved in Indo-Dutch W/S projects

2. *Institutional development in Indo-Dutch water projects*

In the Indo-Dutch integrated rural water supply projects a number of institutional development activities already take place. An overview of the situation in the beginning of 1990 is given in Table 1 at the back of the document. The activities are usually initiated as the need arises during a particular implementation project and many of them do not have a structural character.

With the ongoing sequence of new projects and the agreement on longer term cooperation more opportunities are available to undertake institutional development activities in their own right, as and where the organizations have a felt need and interest.

The present discussion paper lists ten potential areas for Indo-Dutch cooperation on human and institutional development for improved rural water supply and sanitation. They are based on an inventory of the institutional development aspects of the ongoing projects as existed last year, on suggestions from DST/TA, as well as a list of organizational constraints and proposed action by the review and support missions to AP, UP and Gujarat and the technical advisors to the project in Kerala.

Identified areas range from support to institutional development in the state water organizations themselves, to institutional development for maintenance, management and maintenance financing of Indo-Dutch implementation projects, and the longer-term roles of NGOs and NAPSUs. Within these areas, Dutch advisors to the implementation projects give priority to a more structural strengthening of organizational and human capacity of the state water and sanitation organization (items 2.1 and 2.2).

2.1 Organizational adjustments in water sector agencies

Indian water organizations are characterized by highly capable technical staff. Nevertheless a number of organizational problems affect progress and/or quality of implementation projects.

Within the organizations, for example, organograms and function descriptions describing the structure of the organization and the tasks and authority of staff involved in rural water projects are not always available. High staff rotation, in particular of the middle cadres, and sometimes absence of specialization in rural water supply and sanitation make it difficult for staff to acquire and preserve the required skills for integrated rural projects. Long-term performance of projects (functioning, use) is not related to project approach during planning and construction, and maintenance work has a low status and priority.

In staffing, government bans on staff expansion means that essential support services such as groundwater investigations and water quality control remain un- or understaffed. Power of authority of existing staff is sometimes such that many days are needed to get clearance for relatively small amounts for construction or maintenance. Career opportunities and promotion do not necessarily reflect job experience and performance. Fieldstaff who are motivated to work together with the villagers cannot do so for lack of task descriptions, training and appreciation from the organization for non-technical work. Tenders for construction can vary from three to over one hundred contractors and sub-contractors.

These and similar issues are all internal problems of governments and organizations concerned. Nevertheless adaptations are sometimes easier when financial and/or technical support is made available from outside. To address organizational problems and facilitate changes which the organization thinks necessary, support from an organizational advisor or advisors could therefore be made available as and where required. The adviser(s) should combine inside knowledge and experience of the Indian rural water supply and sanitation sector with familiarity and experience with general developments in rural water supply and sanitation, in particular with the integrated approach. Preferably, external advisor(s) would form a team with representatives from the water agency and other authorities concerned.

Possible tasks of the team would be to describe and analyze the organizational structure of the water agency, describe overall objectives of the rural water supply and sanitation programme and link them to existing procedures and results, and identify specific needs and problems for organizational reform.

Findings could then be classified into specific improvement areas, institutional development objectives formulated and plans for specific activities drawn up. In each participating organization, the work could be preceded by a workshop to discuss the concept of institutional development in a wider circle and demonstrate its methods to agency management.

The planned activities would then be ordered into a feasible sequence and timeframe for donor support. They should be part of/contribute to the organization's work in progress and not compete with them in time and funds. Priority areas and activities would be identified and an implementation plan prepared. Emphasis would be laid on finding areas in which an "early and dramatic" success can be achieved from relatively minor inputs. This will help organizational development gain credibility as an integral part of rural water supply and sanitation programmes. Evaluation of the impact of these early activities on the organization's overall goals would be an important part of the work.

As part of their work, the teams should also cover organizational aspects of community participation, hygiene education and involvement of women. Possible questions which may come up during need identification are:

- Why an integrated approach is needed;
- What the objectives are of community participation, involvement of women and hygiene education as part of technical water and sanitation projects;
- How social activities can be integrated in the work of the technical organization. Should for example a special social unit, such as in Kerala be established in technical agencies, or a more integrated research and development unit, as the NAPO in AP? What would be its status, tasks and authority?;
- Whether social units should have their own fieldstaff, as in Kerala, or work through existing services and NGOs;

The latter issues are in turn related to the formulation of a more explicit policy on the division of responsibilities and tasks in integrated rural water supply and sanitation projects, not only during implementation but also for the post-implementation stage (item 2.4). At the moment neither state nor donor government have formulated any organizational policy, which aims at developing lasting and sustainable capacities for community participation, hygiene education and involvement of women, and avoids organizational dependency on external funding of local manpower and manpower work.

2.2 Human capacity building and training for rural water supply

In the last few years, training of engineering staff is receiving increased attention in the NA projects. Training abroad has consisted of a visit to Indonesia (rural water supply programme) and a seminar on women's involvement (INSTRAW/ESCAP). As a result of the latter, the superintending engineer from UP started a pilot project (though not

in the Indo-Dutch project) for tribal female handpump mechanics. Moreover, every year, 2-3 engineers per state per year are supported to attend the IHE international course on low-cost water and sanitation at Delft Technical University (Table 2).

Where immediate training needs arise, RSMs assist in organizing in-project trainings, e.g. on design for field engineers in AP and on maintenance for linesmen and -women in Gujarat. Training manuals, e.g. on site selection in Kerala and maintenance in AP are under development, through not yet in a team approach by technical and social staff.

Continuation of present inputs existing activities

Training at the IHE clearly serves a felt need of the water organizations to develop management capacities for integrated rural water supply projects. This training would be strengthened further if participants selected are already attached to the Indo-Dutch projects and will continue to be so for at least 3 years, as presently agreed in AP. Further, they should be enabled to apply the contents of their training courses in their area of work.

Visits to other programmes and participation in seminars deserve wider application, but should be used more as incentive or reward for field performance and be linked more strictly to obligations for reporting and application of relevant aspects in the own projects. A programme for such visit and conference attendance could be drawn up as part of overall training need investigation and planning.

Short courses

While trainings and visits abroad have their place in overall training strategies, they are disruptive if too long or too frequent, and involve relatively few participants. Several Review and Support Missions have therefore stressed the organization of short-term specific courses within the country, in which a larger number of participants, also from the middle cadre, can participate.

Some of the topics for such courses, as indicated by the project reports would be: the integrated project approach; technical designs and designing for low operation and maintenance costs; use of groundwater; use of low-cost water treatment; improvement of traditional water systems; in-house evaluation on scheme functioning and use; the use of participatory techniques in technical projects and in hygiene education; and reasons and methods for women's involvement in rural water and sanitation projects. The felt need for the latter was already identified through a survey of project team's experience with women's involvement by the Women-in-Development Advisor of the Royal Dutch Embassy⁴. Some courses, e.g. on participatory methods, women's involvement, improvement of traditional water systems, and evaluation would also be relevant for NGOs.

For the development of several of these courses use can be made of the existing in-project trainings as well as existing external courses and course materials (e.g. on Minimum Evaluation Procedures of WHO and UNICEF/IRC⁵, women's involvement of INSTRAW⁶, and participatory methods of PROWESS⁷). Others would have to be developed especially for the Indo-Dutch programme staff, but with the condition that

they will also be useful for other staff of the organization, and can be integrated into the training programmes of the agencies' own in-house training institutes.

Table 2 Training needs identification and training plans in NA-projects (1989/90)

State	Needs assessment	Plan contents
Andhra Pradesh	Local consultants will assess training needs and develop training plan for NA-projects.	Plan to include orientation/training in CP. No consulting specialist on CP/WI included.
Gujarat	Local consultant did overall study and plan with WB financing in 1985.	Low-cost sanitation included. CP/WI not. No training needs identified for NA-Projects beyond what already takes place.
Karnataka	No training needs assessment planned so far	Proposed tr.limited to technical training caretakers and household course latrine maintenance.
Kerala	Expatriate consultancy on overall training needs in progress since 1988	Several hardware aspects not covered. Sanitation, CP and with WB financing. WI not included.
Uttar Pradesh	UPJN formulated own proposal for lower staff (4 regional centres). Plan for higher staff in progress.	Courses to include CP/WI in handpump siting and village/women contribution to agency maintenance.

In-house institutional training

For more systematic and long-term support to training, DAL/ZZ has requested the RSMs to consult and support the implementing organizations on assessing their training needs and linking them to their plans and programmes for in-house training. Inventorization has focused on the water agencies. So far few non-technical aspects are included (Table 2).

Institutional training plans could be strengthened by including training on community participation and involvement of women in every training programme, and ensuring the use of experienced and trained trainers in these aspects. Preferably programmes should also include some practical training in the field, for which some of the Indo-Dutch projects may offer good opportunities.

As a first step towards this purpose, it could be considered to carry out pilot courses on participatory methods and involvement of women for key officials and in-house trainers (training-of-trainers). Subsequently, they can be assisted to develop their own courses and integrate these into the overall in-house training programmes under development in the states.

Another general area for strengthening of in-house training programmes is the training of managerial staff on organizational implications of designing and managing integrated and participatory projects, e.g. for project preparation, local designs, field procedures, training courses and influence of/accountability to users organizations in return to user contributions to maintenance and maintenance financing.

Trainers of in-house training centres as well as NAPSU staff should in all cases be involved in the development of course outlines and materials and in arranging fieldsessions, to ensure that their expertise is used fully and existing capacities are strengthened.

Training needs and other organizations

The above leaves the training needs in other organizations involved in NA projects (sanitation departments, NGOs, NAPSUs, consultants) unaddressed, apart from those aspects covered under items 2.5 and 2.6. Here, the RSMs could play a similarly valuable role to what they did in the water organizations, by helping identify training needs and assessing how these would fit into the support programme presently developing.

2.3 Strengthening of maintenance and maintenance financing

Maintenance of completed projects is presently guaranteed by the Central and State Governments. For Accelerated Rural Water Supply Projects, 10% of annual investment costs must be set aside for maintenance. This budget is increased by the states to maintain also projects that are financed otherwise. While this arrangement was sufficient initially, ongoing construction and progressing age of completed projects increases recurrent costs and may put too large a burden on state finances in future. This is further indicated in Table 3.

With the growing number of water systems, these problems are likely to increase in the near future so that institutional adaptations will be needed. Options for such adaptations include:

- (1) Reduction of maintenance costs through (i) decentralization and/or (ii) delegation of small systems or system parts to the communities themselves;
- (2) Increase of maintenance resources through (i) better charging and collection of household and panchayat tariffs; (ii) allowing and assisting panchayats and water committees to set up their own local financing system to finance local O&M and management costs; (iii) offering a larger range of paid service levels, e.g. group and neighbourhood connections⁸, and (iv) designing small projects (handpumps, mini-schemes) from the very start as community-managed systems⁹.

Table 3 Costs, financing and monitoring of O&M (1987/88)

State	O&M costs/ expenditures	Revenues	Financing	Monitoring performance and recurrent costs
Andhra Pradesh	Est. total cost for AP-I will take 36% of annual O&M budget PRED.	None. Free public taps only.	State subsidy 100%	O&M costs not registered. Monitoring of costs + performance AP-I to be introduced.
Gujarat	Tot.cost '87/88 Santalpur I 28.2 lakhs = ? % ann.budget (?)GWSSB.	Collection Rs 5/cap/.. postponed	State subsidy 100%	Existing estimates exclude costs of staff & transport. No performance monitoring system
Karnataka	O&M budget 86/87 consumed after 6 months	Councils spend Rs. 3-5,000/yr	State subsidy ..%	No detailed insight on actual O&M needs and & reservations
Kerala	Est. O&M cost RWS in 87/88 Rs. 590 lakhs.	Total revenue from users/ councils covers 20%.	State subsidy 80%	No separate records for costs constr.& maintenance. No summary downperiods.
Uttar Pradesh	Est. O&M cost RWS in 87/88 Rs. 279 m.	Total revenue from users Rs. 16m. or 6%.	State subsidy 94%.	Maintenance divisions not in habit of producing regular reports. No reporting formats outside hills region. topped to Rs. 100m. Shortage Rs. 163m.

At present, arrangements for community participation are additions to, not adaptations of agency installation and maintenance systems. When effective, they can bring cost savings, by reducing preventive maintenance costs and bringing better access and service, which in turn is related to users' willingness to pay. Actual savings will however depend on the quality of agency response to community efforts and the degree to which preventive maintenance costs are already budgeted for. Savings also have to be set off against investments needed to establish, train and monitor the water committees.

Savings can be much greater (the World Bank mentions up to factor 10)¹⁰, when certain types or parts of schemes (handpumps, mini-schemes, village distribution nets) are designed and planned as community-managed systems from the beginning. With growing problems in central maintenance and maintenance financing there may therefore be a growing scope for guided experiments with community-managed water

systems and group connections, provided the projects are designed for community management right from the start and training and support for building water management capacity in the villages is available¹¹.

There is clearly a scope for guided experiments or small research and development projects (R&D) in this area, as planned already in AP (community maintenance and private sector involvement) and Kerala (group connections). Often called demonstration projects, these projects involve the local testing of innovative approaches and methods under replicable field conditions (re budget, time, number of agency staff etc.). The projects are either guided by a local staff member, e.g. from a research and planning department, or a local researcher. However, they require special arrangements to ensure their later wider scale application when proved effective. An example of a guided experiment in UP is the community-based drainage project.

Formulation and guidance of R&D projects could be carried out by the NAPSUs in close collaboration with the RSMs and implementing agencies, and should include a familiarization period with similar projects elsewhere, through document study and field-visits.

2.4 Adaptation of task descriptions of fieldstaff to the integrated project approach

Institutional development for integration of community participation, hygiene education, sanitation and in some cases income generation for women has just started. Table 4 gives the scope of participatory water and sanitation projects in mid-1989.

In all states, organization of village or tap committees for water and sanitation has begun, with variations as to methods of formation, scope of tasks and training. Tasks for involving male and female community members in local planning, maintenance, management and evaluation are developed in the field, in close cooperation with NGOs.

However, at managerial levels, conceptual clarity and unity on community participation and involvement of women, and the role of water agencies vis-a-vis NGOs remain to be developed.

Some, for example, see participation as a way to get more general use and better functioning of facilities in government-managed water and latrine programmes, by giving users, and especially women and poor users, some say in local designs and service management. Others see as a goal to build up community capacities so that local organizations themselves can maintain, manage and finance community water supplies, or part of supplies (distribution systems), and latrine projects. Again others see community participation and women's involvement mainly as a service to the agency, with users and water committees cleaning tap sites, reporting problems, controlling misuse, promoting latrines, etc.

A related institutional issue of the integrated approach is manpower development and manpower financing for non-technical work. In all states, promising close cooperation is developing between technical fieldstaff from the water agencies and social fieldstaff from NGOs and social units.

Use of participatory methods and cooperation with NGOs is changing the working procedures in the field, and also affect project timing, scope, coordination structures, etc. However, perhaps because of the lack of policy formulation and task division on community participation and hygiene education, this has not yet resulted in adaptation of task descriptions and procedures for technical staff and the development of integrated field manuals (Table 1, at back of document).

If the developed know-how and methods are to be continued and expanded, and also be reflected in staff recruitment, training etc., they will have to be formally recognized and recorded by the water agency.

Table 4 Institution development for integrated projects (1989)

State	No. villages with RWS projects est/in progr.	No. villages with village water ctees est/in progr.	No. villages with sanitation project est/in progr.	No. villages with hygiene education est/in progr.
Adhra Pradesh	433	256	256	256
Gujarat	269	43	2	95
Karnataka *	364	-	-	-
Kerala	65 **	147 (ward level)	6	21
Uttar Pradesh	2966	50	48	46
Total	4097	507	327	433

* Projects not yet started

** Average population 25,000/village

In the longer run, there is also the question of continuity and sustainability of manpower for community participation and hygiene education. For lasting effects and strong institutional capacities, village water committees, and village sanitation and hygiene education programmes will require continued -though gradually diminishing- support for some time after implementation.

It is not clear whether the NGOs will continue to give such support after Dutch financing ends. So far, this issue has only been approached in AP, where CHAI has agreed to continue low-key support to village action committees after training and implementation have been completed.

A related institutional development aspect concerns the expansion of community participation, hygiene education and sanitation activities beyond the pilot phase. Suitable NGOs are not always available to expand the integrated approach to the now over 4000 RWS project villages. Some NGOs involved (universities, consultants) do not have the mandate, character and permanent fieldstaff to continue work in the pilot areas, nor to expand to a full programme scale. Neither is it clear whether the Netherlands Government is prepared to finance the personnel costs of increasingly large numbers of NGO workers and fieldemployees of social units for a prolonged period.

All these issues call for the formulation of a clearer manpower policy and division of tasks and authority with regard to community participation, hygiene education and sanitation activities added to RWS projects. A first step would be, on DGIS side, the development of a clear policy on manpower financing for community participation and hygiene education. At state level, the joint policy frameworks for Indo-Dutch projects look into this matter, but further working out of the practicalities will require extra efforts and perhaps strengthening of the RSMs with a temporary expert on institutional development in the non-technical aspects of rural water and sanitation.

2.5 Capacity building in hygiene education methods and evaluation

In all states, a promising start has been made with the linkage of hygiene education to Indo-Dutch water and sanitation projects (Table 4). Activities in these programmes focus especially on production and distribution of hygiene education materials and on training.

These activities can be quite useful as a first step in local hygiene education programmes. However, provision of general health information to village men and women, and training on desired behaviour, by themselves seldom lead to lasting changes in local hygiene practices and conditions, which is the ultimate aim of the programmes¹².

Building in evaluations on the impact of the chosen hygiene education strategies on local conditions and practices, as planned in UP, and more attention to strengthening the institutional capacity of villages to plan, implement and sustain their own hygiene improvements, as in AP, seem to be required in all programmes.

Institutional development activities in this area could consist of better information and documentation concerning the effectiveness of various educational methods and materials; familiarization of management levels of health education services and NGOs with recent developments in educational strategies, programme planning and organization; and assistance to develop and implement internal monitoring system and evaluations on the cost-effectiveness of the chosen hygiene education strategy.

2.6 Knowledge exchange on rural sanitation strategies

For sanitation, all Indo-Dutch projects have started pilot projects (Table 4). First experiences with design in Gujarat and evaluation of existing programmes and new pilot projects in UP, AP and Kerala indicate that there are still several problems to be overcome.

These include: the use of a purely technical (construction) approach by some NGOs and water agencies; affordability and replicability of low-cost technologies on a programme scale; follow-up of completed latrines on maintenance and use; narrow focus on latrine projects while priorities of villages or population sections within villages may go to other forms of environmental sanitation improvement; motivation and effectuation of latrine use by especially men and children; and some programmes and subsidies disproportionately benefitting the upper strata in the participating villages.

Review of ongoing programmes indicates that the improvement of village sanitation comprises more than the quick installation of a large number of standard-type latrines in selected villages. Durably and effectively improving village sanitation is a lengthy process, which requires the development of technical, social and organizational capacities in the villages themselves, matched by similar developments in the implementing agencies.

At present, various sanitation approaches are still being tried at pilot scale (UP, Gujarat) or in a larger-scale programmatic approach (Kerala, AP). The magnitude of the remaining task, both quantitatively and qualitatively, warrants a joint reflection on the lessons learned from these individual programmes and the best way to proceed as soon as a sufficient coverage has been achieved in all states and data on duration of maintenance and use are available. One possibility in this area would be to organize a joint conference on sanitation in the Indo-Dutch projects and its implications for institutional development at both village and agency level.

2.7 Adaptation of project preparation and design

Preparation of proposals for new water projects has so far taken the form of standard construction projects, with little description of intended measures for maintenance, use and maintenance financing. Activities for community participation, hygiene education and involvement of women are not generally integrated (Table 1).

Integrated implementation would be facilitated when the proposals were already prepared in an integrated way, based on field studies on local technical conditions, and the felt needs, capacities and willingness of the people to participate in the project. Development toward the preparation of integrated proposals has now started in AP and UP. In Kerala, the Kerala Water Authority and the Socio-Economic Unit recently prepared a joint plan of operation for ongoing projects in the next three years. In Karnataka, two external advisers are being appointed to assist the PRED and other agencies in preparing an integrated project plan.

As project preparation lays the basis for integrated implementation in future, it would be useful to investigate to what extent these developments can further be strengthened. For Gujarat for example, where no Netherlands Assisted Project Support Unit is present, it has been proposed that a separate advisory team assists the GWSSB in preparing the new project proposals in an integrated way.

Also, engineering staff and NGOs at district level may want more training or support in carrying out integrated feasibility studies, to assess not only area selection and technology choice, but also look at the longer term sustainability, views and practices of the people and local organizational capacities for community participation, hygiene education, sanitation and involvement of women.

In technical project design, some reluctance is further reported to deviate from standard design procedures, e.g. on the use of groundwater, aerial photography and intermediate service levels in order to develop more sustainable projects. Here, the proposed short courses (item 2.2) as well as review of project design criteria could play a role.

Another reported problem is the quality of consultancy work in project preparation, design and evaluation. Capable consultancy capacities in both technical and social fields are available in India. Involvement of consultants can give important savings in time and burden for the implementors, provided the consultants are familiar with recent developments in the rural water supply and sanitation sector and get clear terms of reference and guidance from those commissioning the work.

Where this has not been the case, studies have not come up with the kind of data that are useful, (e.g. in baseline and evaluation studies); have contained methodological errors; and have been unnecessary costly because the amount of useful information collected stood in no relationship to the number of person-months put in.

It would therefore seem useful that especially for activities common to all Indo-Dutch projects, such as the carrying out of baseline studies and evaluations, more specific guidelines for consultants are prepared, which are based on the positive and negative experiences gained so far.

2.8 Development of monitoring and evaluation systems

Internal project monitoring and evaluation, often a weak element in implementation projects, is well-developed in the Indo-Dutch water projects. Construction progress, expenditures and costs are monitored by implementing agencies and RSMs and are excellently documented in bi-annual reports. However, for day-to-day management at agency level, as well as monitoring of Indo-Dutch projects at the Royal Dutch Embassy, no easily useable and comprehensive overviews are available.

Moreover, for performance of completed projects, water maintenance divisions and sanitation programmes are not yet in the habit of producing regular reports based on field data (Table 3). Neither do formats for reporting exist everywhere. As a result, there are no reliable data which can be summarized to inform higher management levels about the performance of completed water systems. Sanitary aspects, e.g. drainage and hygiene at water points, are not included.

For sanitation, Kerala SEU-North experiments with community-based monitoring (by the ward water committees) of maintenance and use of installed latrines. In other states, no monitoring is so far reported.

For community participation and hygiene education, monitoring of progress and results has also to be developed. Reference in this respect is made to two recent papers on monitoring indicators in participatory water and sanitation projects published by UNDP/PROWESS¹³ and GTZ¹⁴, and to initiatives to develop a management information system (MIS) for Indo-Dutch projects by the RNE.

Attitudes to integrated monitoring

RSMs and NAPSUs in AP and UP have started to build up systems to monitor construction progress and financing for each major part of technical water projects. However, recognition and adoption of monitoring by the management of implementing agencies is not yet achieved everywhere.

Any MIS project should therefore include the demonstration of the value of a management information system for easier project management, and of the importance of covering not only construction and financing but also maintenance, sanitation and hygiene. Further, engineering agencies should become more aware of the value and possibilities of cooperation with NGOs, health services and village institutions for data collection at field level.

On the other hand, communities, NGOs and local government services will only support collection of field data on functioning and hygiene of rural water systems and improvement of environmental sanitation, if the monitoring system is simple, easy to carry out and is seen to have positive results, through corrective action from village organizations as well as project staff.

Evaluations as management tool: skills and attitudes

With regard to current MIS development, it seems most appropriate when the systems are developed separately within each state, but are linked to the proposed system of the Technology Mission. The latter is also proposed in the Joint Policy Frameworks for Indo-Dutch Projects. Meanwhile, the RNE could develop its own MIS in close consultation with the respective state systems to ensure the mutual compatibility of the systems.

With regard to evaluation of completed construction projects, these have started in all NA-areas. As far as studies have been completed (on water use in Kerala, and sanitation in AP and UP), they have influenced the design of the NA-projects.

This is not the case for the general designs and procedures of the implementing organizations. It is further noticeable that evaluations and other support studies are either carried out by external consultants with terms of reference from the Review and Support Missions, or by the NA-Project Support Units.

This means that within the implementing organizations themselves no evaluation skills are built up, and that the managers of these organizations get no direct experience in guiding and supervising evaluation studies. Moreover, tension between the external consultants and the implementing agency about the outcome of some of the studies have further limited the acceptance and use of the findings by the implementing agencies.

There is thus clearly a need for the implementing organizations to look into the use of evaluations as a managerial and institutional development tool and make greater use of existing in-house evaluation instruments and tools, such as the Minimum Evaluation Procedures of the WHO and the MEP training courses. One way of doing so would be to organize a workshop or workshops in designing participatory evaluations on functioning and use (MEP) in which also some fieldwork is included.

2.9 Knowledge development and information exchange within and between projects

India has many well-trained social workers and scientists, and is known for its expertise in women's income-generating projects. Moreover, in NGO circles there is a long experience with people's participation in community development and preventive health. Knowledge on community participation and involvement of women in water and sanitation and on effective forms of hygiene education, activities which have started only recently, can therefore be expected to develop relatively fast.

Exchange of information in this subject area takes place indirectly, through the reports of the Review and Support Missions. A more personal exchange of information and experience, as well as familiarization with documented experiences in other areas with a tradition in participatory water supply, can stimulate this development and help avoid documented mistakes.

Knowledge development on technical issues, and use and exchange of existing knowledge seem to take place to a smaller degree. Acquisition of reference documents for example happens on an ad-hoc basis (Table 1), as do experiments with new technologies, such as water quality testing through Millipore kits. The review reports provide good documentation of ongoing work, but do not allow for personal discussions and exchange of views. Joint meetings of project teams from the participating states, as taking place between the Review and Support Missions in the Netherlands, have been proposed, but so far have not been effectuated.

Possible activities that could be undertaken in this sense are, at central level, the organization by the Water Coordinator of Joint Meetings of the Indian project teams, and at state level, the strengthening of the documentation and information systems of the participating project organizations.

The NAPSUs can also play a role as knowledge centres, by collecting and using basic documents on low cost technologies and integrated and participatory approaches, and documenting and diffusing project experiences in a systematic way, as happens already to some extent in Kerala.

For the Joint Meetings, the Water Coordinator could compile a time schedule and list of priority topics, as well as give guidance on the type of information to be provided by the individual state programmes, in order to promote high quality of information exchange and subsequent discussions.

A first step for the strengthening of the documentation and information systems of the project organizations could be a fact-finding mission of an information specialist on what project relevant documentation is available in the organizations concerned, and what use is made of it. Further, future proposals for integrated water projects could include a separate budget item for the acquisition and use of project-relevant documentation, provided organizational arrangements for its management and use already exist and function, or can be helped to do so.

2.10 Role of support structures

A final area for consideration as part of this discussion paper on institutional development is the role of the project support structures. For the Review and Support Missions, this role is gradually changing from general monitoring and review to a specific support function. The latter is in line with the long-term DGIS policy on reducing external support to implementation projects, although there may be reasons (knowledge and contacts built up, project specific expertise) to gradually replace direct support visits by other forms of communication, such as correspondence and exchange and review of documents and inputs into training programmes and other institutional development activities.

With the scheduled introduction of social wings or socio-economic units in the implementing organizations, as proposed in the joint policy frameworks, the needs for and position of the NAPSUs will also change. On the other hand, it is expected that their time and expertise will remain to be needed for some time by the RNE as well as the implementing agencies. One option to do so would be to continue the services of the NAPSUs to the Indo-Dutch integrated water projects on a part-time basis, combining a monitoring task for the RNE with an advisory task to the newly formed social wings or R&D units. In the remaining months, the NAPSUs could either get a support task similar to that of the water projects in other Indo-Dutch development projects in the region, or make their professional expertise available to other integrated water projects and to rural water supply training programmes in the region.

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6. INSTRAW has prepared a series of training modules on involvement of women in water and sanitation projects and organized a regional training course with ESCAP. The course has been attended by a female engineer from the NA programmes in AP, Kerala, Gujarat and UP.
7. PROWESS/UNDP has developed a course and manual on the participatory approach which has been used in several countries including in Central Asia.
8. A group tap is a metered or unmetered connection installed by a group of households which also jointly pays the monthly tariff. Taps may be used by small clusters of 3-7 neighbours (group connection) to larger neighbourhood groups of 20-30 households (communal water points). Experiences exist with both types of taps in India and elsewhere, e.g. in Malawi, where they are managed by an Indian-trained Malawian sociologist. These experiences show that group taps can greatly contribute to higher service access combined with better cost-recovery, provided the taps are installed with sufficient expertise on community participation, training and monitoring.
9. Experiences with panchayat-managed water systems have not been positive in the past. Central agencies, such as UPJN and GWSSB have therefore taken over most of the maintenance and management of small community water systems. However, these systems were built at the time without any involvement of the users in local planning and design, and without any preparation and support of the panchayats (or local water committees created under the panchayats) for local management, maintenance and financing.
In modern community-managed systems, the users and their organization are actively involved in choosing a water supply system which they themselves can maintain and manage. They are thereafter assisted to set up appropriate local maintenance, management and financing systems, and trained to implement these systems. The communities are thereafter independent in the operation, maintenance and management of the system, but the central agency continues to monitor performance and provides the general conditions for the communities' self-reliance, such as availability of spare parts and chemicals, training and technical and financial back-up for large repairs and expansion.

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3. D'Souza, A. (1989). Note to Proposal for a policy framework and medium-term plan for the Indo-Dutch rural drinking water supply and sanitation programme in Kerala.
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5. Graaf, M. de (1989). Changing knowledge. Trivandrum, SEU.
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Table 2 INDEV activities in NA-RUSS projects in 4 Indian states *)

State	Andhra Pradesh	Gujarat	Kerala	Uttar Pradesh
Management capacity building	<ul style="list-style-type: none"> - Takes place esp. in NAPSU (development own HIS, evaluation sanitation pilot project and AP-1). - At village level, half of CP funds to be spent on training VACs. 	<ul style="list-style-type: none"> - No specific activities reported. 	<ul style="list-style-type: none"> - No specific activities reported. 	<ul style="list-style-type: none"> - No specific activities reported.
Adaptation of project preparation implementation and maintenance systems	<ul style="list-style-type: none"> - Preparation AP-II and sanitation adapted to experiences AP-I and sanitation pilot. No fully integrated proposal/field preparation as yet. - One NGO implements all CP/Myed on program scale. San. to follow according to field needs. - Maintenance & Monitoring incl. role VACs still to be adapted. - Link with women income generation established. 	<ul style="list-style-type: none"> - Some adaptation to preparation GU-II, but no integrated proposal as yet. - Implementation adapted to CP in tap location and problem reporting under evaluation. In San & Myed still to be developed. - Maintenance and monitoring incl. role VAC's still to be adapted. - Feasibility study for women's income generation in progress. 	<ul style="list-style-type: none"> - No new preparation planned. KE-I to be near completion first. - Implementation adapted to CP in taplocation, promotion latrines and hygiene education by SEU/s. - Maintenance software created but not harmonized yet. Technical monitoring to be established. 	<ul style="list-style-type: none"> - Preparation UP VII planned as integrated proposal. - Implementation adapted to CP in tap location and problem reporting for UP-VI (handpumps). Under testing. - CP in sanitation/Myed on pilot scale by 2 NGOs. - Maintenance and monitoring, incl. role VUCs still to be adapted.
Development of tested procedures and materials	<ul style="list-style-type: none"> - Technical O&M manual under preparation - Position and role VACs to be developed in villages first. Formalization afterwards. - Existing hygiene education appraised (no report). New methods, and material (incl. folk media) under development. - Computerized village data bank established. Baseline by locally consultant was failure. 	<ul style="list-style-type: none"> - first procedures for CP in siting SPs. Not entirely successful. Probable reasons: lack joint approach GUSSE-NGO. New procedures under testing. - New hygiene education materials produced (no appraisal, testing). More material planned with pretest. 	<ul style="list-style-type: none"> - Manuals for establishing VUCs and tap location tested. Approval KWA pending (due to higher costs?) - Mass hygiene education materials developed, majority not tested. - Monitoring of maintenance & use of completed latrines by VUCs and fieldstaff started. 	<ul style="list-style-type: none"> - Procedures for establishment and tasks VUCs established. To be tested. - Existing hygiene education appraised (no report). New methods & materials under testing. - Technical manual on handpump dully in preparation.
Provision of physical inputs	<ul style="list-style-type: none"> - Equipment, computerization and documentation to NAPSU. - Office equipment and transport to NGOs. - Literature to Darsi water laboratory. 	<ul style="list-style-type: none"> - Funds for equipment, reference library and transport for NGOs. - Millipore fieldkits to GUSSE. Reported out of order since. 	<ul style="list-style-type: none"> - Equipment, computerization and documentation coordinating office SEUs. 	<ul style="list-style-type: none"> - Office equipment and transport to NGOs and PSU. - Inspection bungalows for JM staff.
Human resources development	<ul style="list-style-type: none"> - Ambitious training needs assessment for NA projects by local consultant toned down by RSN and NAPSU. 	<ul style="list-style-type: none"> - Evaluation QI-1 includes assessment manpower needs, availability & performance. - Training needs assessment whole GUSSE already done by World Bank. Training plan for 34,000 staff lacks software. 	<ul style="list-style-type: none"> - Training needs assessment for whole KWA in progress by British Water Int. Lacks all software and some technology aspects. 	<ul style="list-style-type: none"> - In-house training needs assessment carried out by JM. - Training plan and curriculum established for 4 regional centres. Plans include training on limited forms of CP.
Training	<ul style="list-style-type: none"> - 5 PREB eng. to 1 year INE course on low-cost RUS/S - 1 female engineer to regional seminar on role women in DUS/S - 5 Workshops, on integrated approach (3), water treatment (1), technical design (1). - 27 NGO field workers, 155 village volunteers to be trained for CP. - 10 women extensionists to be trained for income generation project. 	<ul style="list-style-type: none"> - 4 engineers to INE course 1990. 1 female engineer to regional seminar on role of women. - Orientation of village leaders, and training women on water use, hygiene and income generation planned. 	<ul style="list-style-type: none"> - 1 female engineer to regional seminar on role of women. - Pilot training of village masses, VUCs and existing Govt. services for construction, promotion and upkeep latrines. 	<ul style="list-style-type: none"> - 1 female engineer to regional seminar on role of women, resulting in pilot training and employment of tribal women as handpump mechanics. - 1 Workshop on CP in handpump projects. - Training on CP in handpump projects planned for JM staff at all levels.
Management of human resources	<ul style="list-style-type: none"> - Manpower problems reported from lack of specialization and career opportunities. - For AP II, exclusive RUS staff sanctioned but impeded by Govt. expansion ban. 	<ul style="list-style-type: none"> - Manpower problems reported at junior engineer level and in water quality control. 	<ul style="list-style-type: none"> - Manpower problems reported re power of authority at field level. 	<ul style="list-style-type: none"> - Manpower problems reported in staffing support services (geohydrological investigations, water quality control).
Structural and organizational adjustments	<ul style="list-style-type: none"> - Donor financed NAPSU established for monitoring and development. - Coordination 2 NGOs and 1 Govt. agency by regular Apex and district-committees - VACs in villages. - Standing ctee to monitor technical performance AP-I. - Independent state labs for monitoring water quality. No testing after public taps. 	<ul style="list-style-type: none"> - No NAPSU. M&D by RSN. - GUSSE desires own in-house SEU for coordination/guidance software. Overruled by 806. - Coordination 7 NGOs, 1 Govt. Agency by NGO cell. Meets rarely. - Monitoring O&M by branchlike ctees introduced. - Field tests water quality (incl. home tests) introduced. Not continued. 	<ul style="list-style-type: none"> - Donor financed SEUs and CO monitor and develop CP/San/Myed. - Need adjustment to fulfill KWA as well as user needs. - Integration into KWA planned in 3 years. - Need to specify and upgrade status of maintenance tasks identified. 	<ul style="list-style-type: none"> - Donor-financed PSU, to develop into NAPSU. - Coordination 2 NGOs, 2 Govt. Agencies by? - Village tap and water committees planned. - Separate maintenance circles established for completed schemes. - Monitoring technical performance of completed schemes beyond proposed.

