FEBRUARY 2003 • DISA SJÖBLOM, AJAY RAI

Background Study for the Swedish Country Strategy for India 2003–2007

Natural Resource Management in India

Foreword

Degradation of natural resources has a direct negative impact on livelihoods of poor people. During the past decade, considerable achievements in decentralising the management of natural resources have been made, and a number of innovative initiatives have been taken towards this end. They include the new watershed development guidelines, the sector reform process in the drinking water and sanitation sector, the joint forest management programme, and the water users' associations that have been created in many states. On the other hand, many practises, particularly in the water sector, are still geared towards exploitation rather than management. A case in point is the subsidisation of drinking water, irrigation and electricity services that has encouraged inefficient water management and over exploitation of ground water.

The Swedish International Development Cooperation Agency (Sida) is currently preparing a new Country Strategy for the development co-operation between Sweden and India. In order to provide the Embassy with information on the linkages between poverty and natural resource management in India, with specific focus on water resource management, we asked a team of consultants to make recommendations on the following:

- Detailed objectives of the future co-operation;
- Strategies, approaches and methods of co-operation;
- Strategic areas of future co-operation and level of ambition for Sida;
- Institutional and financial modes/mechanisms of co-operation.

We are pleased to share with you their report.

New Delhi, February 2003

Owe Andersson
Counsellor and Head
Development Cooperation Section
Embassy of Sweden

Published by Sida 2003

Embassy of Sweden, New Delhi

Author: Disa Sjöblom, Ajay Rai

Printed by Elanders Novum AB, 2003

Art no: SIDA2187en

Table of contents

Abbreviations

ARWSP	Accelerated Rural Water Supply and Sanitation Programme
CRSP	Central Rural Sanitation Programme
Danida	Danish Agency for Development Assistance
DDP	Desert Development Programme
DFID	Department for International Development
DPAP	Drought Prone Areas Programme
DRDA	District Rural Development Agency
EAS	Employment Assurance Scheme
EU	European Union
FD	Forest Department
FDA	Forest Development Agency
GIS	Geographical Information Systems
GoI	Government of India
IDWSSD	International Decade for Water Supply and Sanitation Development
IWDP	Integrated Wasteland Development Programme
IWRM	Integrated Water Resource Management
JFM	Joint Forest Management
NGO	Non-government Organisation
NRM	Natural Resource Management
NTFP	Non-Timber Forest Produce
NWDPRA	National Watershed Development Programme for Rainfed Areas
O&M	Operation and Maintenance
PHED	Public Health Engineering Department
PMGY	Prime Minister's Gramodaya Yojana
PRIs	Panchayati Raj Institutions
PR&RD	Panchayati Raj and Rural Development
RGNDWM	Rajiv Gandhi National Drinking Water Mission
SDC	Swiss Agency for Development Cooperation
SFC	State Finance Commission
SGSY	Swarnjayanti Gram Swarozgar Yojana (Golden Jubilee Rural Self-employment Programme)
SGVSY	Samanvit Grameen Vanikaran Samridhi Yojana (Integrated Rural Forestry Development Plan)
Sida	Swedish International Development Co-operation Agency
TWAD	Tamil Nadu Water and Drainage Board
UNICEF	United Nations Children's Fund
WRD	Water Resources Department
WSP-SA	Water and Sanitation Program – South Asia

Executive Summary

Introduction

The purpose of the present mission is to propose a strategy for Sida support to India in the field of natural resource management (NRM) with a focus on water. The mission forms part of Sida's ongoing activities to prepare a new country strategy for India that will begin in 2003.

Poverty and Natural Resource Management

Degradation of natural resources has a direct negative bearing on livelihoods of poor people. However, experience from India shows that improvements in resource productivity per se cannot be equated with poverty reduction. As an example, several years of watershed development programmes has illustrated that the poor have often been excluded from accessing gains in productivity as well as related decision-making processes. In view of Sida's increased attention paid to poverty reduction, it is crucial that Sida incorporates rigorous poverty analysis and assessment at the outset of future NRM programmes.

Forestry

After years of failing to protect forests through exclusion of people from forest lands, the government has acknowledged that inclusion of people in forest protection and management is the only way forward. Joint Forest Management (JFM), which entitles villagers to certain rights to forest produce in lieu of protection, is the main policy and strategy through which local people's participation is realised. Yet, the success of JFM is constrained by lack of local capacity to manage forests; inadequate capacity of the Forest Department to extend appropriate support to local people; ambiguous rules and regulations; weak legal status of JFM committees, and; symbolic rather than actual participation of marginalised groups. Apart from creating a more enabling legal environment, capacity-building for both the Forest Department and community institutions are needed to improve forest management and make JFM more community-driven and inclusive.

Despite these generic problems of JFM, there are positive developments that can be drawn on. In Orissa, where Sida is contemplating to extend support to community forestry, the presence of a large number of self-initiated forest protection efforts; an extensive number of NGOs active in forestry; the presence of a state-level JFM committee, and; evolution of confederations of community forest management organisations, contribute to an enabling context for community forestry to progress. In addition, local control over Non-Timber Forest Products through the 73rd Amendment offers an opportunity for communities to exercise greater control over minor forest produce.

Water

Rising demand and poor management of water resources have resulted in increased water scarcity in India. For decades, the approach to water resources has been focusing on exploitation and development rather than management. Subsidisations of irrigation and electricity services have encouraged inefficient water management and overexploitation of groundwater. The policy, legal and institutional framework that surrounds water is inadequate to deal with the current problems. A plethora of government departments involved in water inhibits effective coordination and formulation of sound strategies. Lack of political will and resistance from large farmers constrain enforcement of water use regulation and tariff rationalisation despite these being recognised as important measures in the National Water Policy. Integrated Water Resource Management (IWRM), as a holistic approach to water management, is yet to gain ground in India.

However, some headway has been made towards water resource conservation and management in donor supported programmes by highlighting the need for institutional reform and people's participation. It is now widely accepted that community-based water management should be a key strategy for analysing, planning and managing water resources in an equitable and sustainable way. The government as well as donors are increasingly looking to Gram Panchayats to perform this role. However, substantial inputs will be required to build the knowledge and capacity of Panchayats in this regard.

Despite substantial government investments in rural water supply, quality of and access to water sources remains an issue in many parts of the country. Apart from increased water scarcity, centralisation of water infrastructure and lack of local involvement and management have intensified the problem. Acknowledging the unsustainability of water supplies, the government has embarked on a sector reform programme that makes Panchayati Raj Institutions responsible for operation and maintenance. However, reviews suggest that more clarity is needed of institutional roles and strengthening of Panchayats to effectively manage the reform process. Coverage of rural sanitation is limited in India. The key problem is perceived as low demand due to lack of awareness and failure of large-scale sanitation initiatives to develop locally suitable options.

Proposed Sida Strategy

The mission proposes the following overall strategy for the Sida NRM programme:

Goal

Improve livelihoods and well-being of the poor through sustainable and equitable management of forest and water resources.

Purpose

Contribute to the development of water and forest policies and practices that are sustainable and conducive to the poor and enhance their inclusion in the decentralisation process.

Objectives

a) To strengthen the capacity of Panchayati Raj and related community institutions to conserve, manage, and use water and forest resources in an inclusive, pro-poor, and sustainable manner.

b) To improve the livelihoods and well-being of the poor through increased access, control and better management of water and forest resources.

c) To facilitate development of policy, programmes and practices consistent with the principles of Integrated Water Resource Management (IWRM).

Institutional Framework

There is a need to work with several institutions to have an impact on the water sector. In light of the responsibilities and powers (although somewhat ambiguous) given to Gram Panchayats to manage natural resources through the 73rd Amendment, they emerge as the most appropriate institutional platform for a Sida programme. However, Gram Panchayats will require extensive support to assume their role as resource managers and to become more socially inclusive, transparent and accountable. The community-based institutional framework also needs to include user groups that can work with the Panchayats. The Panchayat Raj & Rural Development Department is overall responsible for the development of Panchayats and therefore appears as the most suitable counterpart at

government level. Government line departments dealing with water resources have important roles to play in facilitating Panchayats to build capacity of water-related management. NGOs provide a ground for experimentation and innovation and are required to help strengthening Panchayats and user groups. The private sector can play a role in developing local enterprise in production as well as management of water-related activities. Partnerships with research institutions give scope for a dialogue around water issues.

Geographical Location

The team suggests that Sida should only consider support to areas with a) high incidence of poverty that can be impacted by water-sector interventions b) an enabling and decentralisation-oriented environment, and c) limited donor support in the water sector. The states recommended for further exploration are Chattisgarh, Karnataka, Madhya Pradesh, Rajasthan and Tamil Nadu. The exact locations of future Sida support should however be based on a further dialogue within the various states and opportunities that emerge to work towards Sida's goal.

Swedish – India Partnerships

The NRM programme should draw on existing expertise in Sweden related to water management in India and other developing countries. Swedish organisations should be encouraged to enter into partnerships with Indian NGOs working on water. This will not only benefit programme development, but also enhance the expertise of the Swedish resource base to work with NRM and poverty in India.

Financing Forms

Sida assistance to the NRM programme should be in the form of grants for capacity development and physical activities that cannot be funded through regular Indian government programmes. There is a plethora of government funds that can be utilised for physical activities.

Proposed Programme Options

For Sida to be an effective player in the water sector in India it will be necessary to work with conventional sub-sectors while gradually introducing innovation. Extensive work is required to make communities more inclusive and capable vis-à-vis water use and management. Three options have been outlined for Sida support.

Water Conservation and Management

Measures that conserve and manage water will be of utmost importance to ensure availability of water for productive as well as consumptive purposes. Sida support should focus on building capacity of Gram Panchayats and related community institutions to manage water in a pro-poor and sustainable manner.

Drinking Water and Sanitation

Given the importance of access to safe drinking water and sanitation for livelihoods and well-being, it is recommended that Sida continues support to this sub-sector through UNICEF.

Capacity-building for IWRM

Considering Sida's limited experience of comprehensive water management in India and the novelty and complexity of IWRM, it is proposed that Sida support should focus on building understanding and small-scale innovation around IWRM rather than embarking on an extensive bilateral field programme at the outset.

Risks and Killing Factors

There are several inherent risks of the proposed NRM strategy that must be addressed at the time of programme design. These relate to, for example, the socio-political fabric of Panchayati Raj Institutions, lack of commitment to implement the 73rd Amendment as well as Sida's capacity to steer the programme.

Suggestions for Taking the Process Forward

A five-stage process that could facilitate Sida in preparing programme options and selecting geographical locations is outlined. This would include identification of a set of options in various states through an active dialogue and situation analysis, requesting potential partners to develop proposals, and appraising the different opportunities.

1. Introduction

The present mission was aimed at contributing to Sida's ongoing preparation of a country strategy for India that will commence in 2003 and last for five years. The purpose of this assignment is to assist Sida in formulating a proposal for development cooperation in the field of natural resource management (NRM), with a specific focus on water. The mission was undertaken during May and June 2002 and involved interactions with government representatives, donors, NGOs and sector experts at national and state level (see Annex 1). Visits were undertaken to Chattisgarh, Karnataka, Madhya Pradesh, Rajasthan, Tamil Nadu and Uttaranchal.

Sida has in the past collaborated with India on bilateral and NGO interventions related to forestry, land husbandry, and, to a lesser extent, water. While these programmes and projects have resulted in the creation of extensive physical assets, it is recognised that their impact and sustainability are hampered by inadequate attention paid to poverty, institutional and policy related issues.

In the new country strategy, Sida has expressed a particular interest in collaborating with India on activities that would support integrated water resources management (IWRM) and approaches that would strengthen Panchayati Raj Institutions (PRIs). The analysis in this document therefore pays specific attention to these. With regard to forestry, the scope of the study is to provide an overall policy and institutional analysis, and to explore the link between the forest sector and livelihoods in Orissa, where the state government has submitted a proposal to Sida related to community forestry.

The aim of this study is thus to propose a strategy for Swedish support to the NRM sector, focussing on water. The objectives of the assignment are to outline:

- Detailed objectives for future cooperation.
- Strategies, approaches and methods of cooperation.
- Institutional and financial modes of cooperation.

The terms of reference for the assignment are attached as Annex 2.

The document is divided into nine sections, including this introduction. Section 2 gives an overview of the link between poverty and natural resource management. Sections 3 and 4 discuss the policy and legislative framework, government programmes, donor interventions and experiences and key issues in the forestry and water sectors. Section 5 provides an analysis of the ongoing Panchayati Raj decentralisation process linked to NRM, including emergent opportunities and challenges. Section 6 outlines the proposed goal, purpose and objectives of Sida's engagement in the water sector before documenting issues related to institutional arrangements, geographical focus, potential collaboration with donors, Swedish-India partnership and financing structures. Section 7 details three programme options along with their rationale, objectives, outputs, potential location, programme framework and opportunities they offer for policy and institutional impact and added value. Section 8 summarises the generic risk factors of the proposed strategy and the concluding Section 9 provides pointers to the way forward.

2. The Link between Poverty and Natural Resource Management

Despite rapid urbanisation and increased livelihood diversification, more than 60 per cent of India's population still depend on agriculture for livelihoods. The nexus between poverty and environmental conservation remains strong. Land degradation is a key issue affecting resource productivity. It is estimated that about one third of the soil in India has been affected by erosion. This has a direct impact on agricultural productivity and hence food production, especially for resource poor farmers living off marginal land-holdings. The area declining under forest cover has now been arrested, but the volume and density of forests have been reduced causing scarcity of valuable forest produce, important for the livelihoods of poor in many regions (TERI, 1998).

Overexploitation of surface and groundwater threatens the quantity, reliability and quality of water availability. Water is rapidly becoming a scarce resource. Growing scarcity and competition for water poses a major threat to advances in poverty reduction by limiting productive as well as consumptive aspects of livelihoods and well-being. If this trend is not reversed, it is believed that an increasing number of poor people may find more difficulty in securing access to water than securing access to food, primary health care, or education (Barker et al, undated). Access to safe water supply and sanitation means a lot for economic and social well-being in India. Fetching water, a task that is often placed on women and children, can be labour intensive and exhausting. Finding a place for defecation can be especially time-consuming for women. Illness, or even death, caused by water-related diseases can place a heavy strain on a household's livelihoods by loss of income, cost of medicines and time spent on care. Despite significant improvements in drinking water supply and sanitation during the last decades, environmental factors are still responsible for many diseases caused by inadequate hygiene, water contamination, and unsafe supplies. About 200 million people in India still do not have access to safe drinking water and nearly 1.5 million children die each year due to water-borne diseases (Nautiyal, 2002).

There have been many initiatives to combat degradation and increase resource productivity, which the poor have been able to benefit from in various ways. Large-scale irrigation has played a major role in economic growth in India by increasing food production and providing employment. In many parts of India, low-cost tube well irrigation has stimulated agricultural production for small-scale farmers and brought many households out of poverty. Outside high potential irrigation areas, soil and water conservation alone has increased agricultural productivity and enabled new and additional crops to be grown. Coupled with minor irrigation, productivity levels have in some semi-arid areas dramatically improved household food production and security. Increased work on land has generated employment opportunities for poor people. Forest protection activities involving communities have increased availability of forest produce.

However, in addition to the question of sustainability of many of these initiatives, it is increasingly being recognised that natural resource management per se may not create sustainable livelihood outcomes for rural poor. In fact, scattered evidence at times suggests experience to the contrary. As an example, watershed development programmes in India have largely rested on the assumption that improvements in the resource base would automatically lead to reduction in poverty. However, not only has it become evident that these programmes have been biased towards the landed (in terms of increase in water availability and land productivity), but also that they can work against the interests of the landless by reducing their access to common lands citing the need for protection. Livestock belonging to the poor have been banned from entering newly-planted public and private

plantations. Increased productivity has resulted in encroachments onto public lands for agriculture and the poor being denied access for grazing. In some cases lack of access to grazing land has forced the landless to sell their livestock (Kerr, 1998). Where aquifers have been recharged and water availability increased, land-rich households have been able to capitalise on water to increase their production, at times over-exploiting water resources, especially groundwater, to negate gains. Local committees established in watershed programmes often reflect social and power relations in villages, limiting the influence of the poor.

The above illustrates that the link between improved resource productivity and poverty reduction is far from automatic. Perhaps one of the biggest challenges of future natural resource management programmes is to contribute to poverty reduction by creating sustainable improvements in the livelihoods of the poor. This will require better targeting and supporting positive directions of change with regard to resource access and equity. Poor people must be included to a greater extent and have a larger say and share in NRM programmes. It has been demonstrated that support to a geographical area with high incidence of poverty or a strategy based on 'poverty inclusion', are inadequate approaches to combat poverty.

Future strategies must be based on a situation-specific analysis of resource use at household and community level, and an understanding of how this is related to local as well as external social and economic institutions and processes. Thus, for natural resource development strategies to create pro-poor outcomes, the following issues will need an improved understanding:

- Who are the poor and why are they poor? How are their livelihood portfolios and strategies linked to different types of natural resources? How can increased availability of, for example, water or forest produce improve their asset base and contribute to enhance their livelihoods and well-being?
- What are the barriers that reduce poor people's claims and access to resources? How can these be overcome? What opportunities exist for enhancing poor people's inclusion and power in community and political processes related to resource management?
- What is the link between the local policy and wider policy issues? How can poor people's rights to water be negotiated and improved within this? What scope is there for change in policy and practice?

To understand whether a natural resource development intervention will have desirable livelihood outcomes for the poor requires a framework for poverty analysis. It is generally agreed that poverty is multi-dimensional and dynamic and originates in a set of interlocking factors that reinforce ill-being in individuals, households and communities. The Department for International Development (DFID) draws extensively on the Sustainable Livelihoods (SL) approach as a framework for analysing its rural development programmes in India. Although there are reservations about the unqualified application of the SL approach as a blueprint for poverty analysis, it does nevertheless offer a starting point for unpacking micro and macro links of resources and livelihoods by looking at households, and also by drawing attention to institutional and policy structures (see e.g. Carney, 1998). Increased attention is also being accorded by many donors in poverty analysis to various tangible and non-tangible dimensions of vulnerability including economic vulnerability; social vulnerability; vulnerability arising from lack of knowledge and information; and vulnerability arising from natural disasters. In many instances, the vulnerability concept can provide some answers to not only who *is* poor today, but also who is likely to *become poor* (see e.g. Chaudhuri, 2001). Studies are beginning to emerge in India along these lines describing people's experiences of poverty and

categorising the problems of different groups of poor and how their needs can be better met at programme and policy level (e.g. Loughhead et al, 2000; Tewari, 2001).

With regard to the Sida NRM programme, study approaches being used currently can be synthesised to enable a better understanding of poverty-NRM linkages that need to be addressed at the time of programme design. An initial and rigorous poverty analysis will be crucial to developing approaches that are genuinely pro-poor.

3. Forestry

3.1 Overview

Forests cover almost one fifth of the national land area of India. However, about 42 per cent of these are degraded. Recent surveys indicate a slight increase in the forest area over the last two years. However, this data is an insufficient indicator of the condition of India's forests, since levels of aggregation reveal little about trends in quality. Degradation, not deforestation, is currently considered to be the major problem as deforestation has reduced due to massive afforestation programmes and changes in government policies over the last 25 years. Shrinking common property resource base, rapidly increasing human and livestock population, and poverty are some of the factors contributing to the pressure on the existing forests. Though pressure from forest-dependent local people is often cited as a major cause of forest degradation, it has also been the result of interventions by multiple actors, including forest industry, involved in disturbing the same area of forest at different points in time.

About 200 million of India's around one billion population (with more than 68 million tribal) are partially or wholly dependent on forest resources for their livelihoods. There is a strong correlation between the locations of tribal people, high-poverty areas and forests. Forestry is estimated to contribute to about one percent of GDP, but this does not include subsistence use and local market transactions. Large-scale industry – mostly for pulp and paper – uses only about 10 percent of forest raw material, while about 23,000 sawmills and a large number of cottage units process 90 percent.

The authority and resources for protection and management of forests are vested with the state Forest Departments (FD). It is widely recognised that, given the expanse and diversity of forest lands and people within the country, the FD lacks the capacity in its present form to effectively implement forest policy and law. The inability to regulate access to forest lands and increased appreciation for people's dependence on forests, have paved the way for policies and programmes that seek participation of village communities in development and protection of forests (Social Forestry Programmes of the 1970's and 1980's and Joint Forest Management Programmes (JFM) of the 1990's). Currently such programmes are manifested in various schemes related to regeneration of natural forests through JFM, wasteland and watershed development, block plantations, promotion of farm forestry and agro-forestry, eco-restoration, etc.

[1] The Steering Committee on Environment, Forests & Wildlife identifies increase in the forest cover through JFM, agro-forestry, urban forestry and afforestation of wastelands as the major area of thrust for the Tenth Five-Year Plan. The other areas of focus are to build capacity for conservation and development of natural resources, increase forest productivity, reduce demand and supply imbalances, increase export and reduce import of timber and pulpwood and other forest produce

3.2 Policy and Programme Framework

Although India has a well-articulated forest policy this has not been fully reflected in strategies for implementation. A coherent strategy to meet the many diverse demands for forest products and services from the forest sector is lacking.

The driving force behind the current forest strategy is the National Forest Policy of 1988, which stresses management of forests for conservation and local needs, and makes commercial exploitation of forests and revenue generation secondary objectives. The 1988 forest policy has not been translated into law. It remains a broad statement of government intent and does little in the way of specifying any legal rights or duties owed to forest communities. The forest rules and institutional framework continue to be archaic and disabling in relation to new approaches and strategies. The Social Forestry programmes of the eighties led to some innovation in the legislative and institutional framework, but they proved to be short-lived, either due to lack of application or due to undermining by other rules which negated the power, control, and access provided to the local community.[2]

Within government programme design there is now an increasing rhetoric on the symbiotic relationship between forest and forest dwellers, and of the need to address the issue of poverty alleviation, provision of gainful employment and empowerment of tribals and women in the forest sector. The latest government sponsored forest development programme (*Samanvit Grameen Vanikaran Samridhi Yojana (SGVSY)* or 'Integrated Rural Forestry Development Plan') has similar themes. SGVSY, which is an umbrella scheme under which most of the previous central government sponsored schemes have been merged, is implemented in areas/villages covered either under JFM or Eco-development. Apart from focussing on creation of rural employment and community assets, the scheme provides for constitution of a registered Forest Development Agency (FDA) – a federation of village-level forest organisations for planning, fund delivery and monitoring the scheme. Experiences from the field show that FDAs, which are to be registered as societies under the Societies Registration Act, need further elaboration of their objective, structure, functions, and power to be an effective institution for supporting JFM.

Formally initiated in 1989, JFM is currently at the center stage of India's forest strategy. Over the past decade, over 15 percent of the country's forest lands are estimated to have been brought under JFM. In absolute terms, nearly 45,000 JFM groups are involved in protection of forests in 22 states of the country. In the year 2000, fresh guidelines issued by the central government addressed critical issues related to legal back-up of the JFM committees, participation of women in JFM, extension of JFM to dense forest areas, preparation of micro-plans in JFM areas, conflict resolution, and recognition of self-initiated groups. A JFM cell and a JFM network of foresters have been constituted at the centre to monitor the impact of JFM, and to ensure uniformity in policy among various states.

3.3 Donor Interventions and Experience

The World Bank, DFID, and the European Union (EU) are some of the most important and visible donors in the forest sector in India (see Annex 3 for details).[3] The donor supported projects aim at establishing forest management systems in which the local community has a direct role in the devel-

[2] The rules to manage village forests (e.g. Orissa Village Forest Rules, 1985) are an example.

[3] The World Bank has supported JFM projects in Madhya Pradesh, Uttar Pradesh and Andhra Pradesh. DFID has supported community-based forestry projects in Karnataka and Himachal Pradesh, and the EU has a community forestry project in Haryana

opment, protection and management of forests. Most of these projects take the existing JFM framework as the starting point, with the understanding that the framework has significant weaknesses that need to be addressed. The focus is on developing and establishing enabling legal and institutional frameworks for a 'workable partnership' between the FD and the local communities. Access to benefits and decision-making for women and poor, emphasis on Non-Timber Forest Products (NTFPs) based forest management or enterprise, development of community- based management systems, provision of alternate income sources, creation of community assets etc. are the common themes in current donor supported programmes.

More recently, donor support is increasingly focussing on sector support instead of projects and targeting reforms in governance. Within donor projects, the multi-sectoral linkages of forest related issues are often recognised in the design and project management plans, but rarely addressed in a comprehensive manner during implementation. In spite of all the stated aims, micro-plans rarely address issues other than plantations. Attempts to link forestry projects with other government departments and ongoing rural development programmes have not been very successful.

Donor supported programmes recognise and try to address weaknesses in the capacity of the FD to implement a 'participatory process'. While the capabilities, as reflected in 'mindset' or knowledge of 'participatory tools and techniques' are perceived to have been addressed to a certain extent through strong emphasis on training, the projects have achieved little in establishing an enabling and sustainable institutional framework for delivery of support from FD to the village level forest management organisations. The institutional arrangements for policy review, strategy formulation, NGO collaboration, micro-planning etc. rarely survive beyond the project period. The issue of a 'top-down' bureaucratic FD to implement a 'bottom-up' process has not been given the attention it requires.

Capacity-building of the village community to manage their forests is another major focus of donor supported community forestry/JFM projects. Most of the projects provide for constitution of a village/sub-village institution with a pre-defined role in planning, implementation and monitoring of project activities. The desired aim is to establish community management systems, which could sustain the resource management activities with administrative, technical, legal or financial support from FD. The sustainability of such institutions is considered to be one of the biggest challenges. Many project-created institutions deteriorate once the project is over, and there is no incentive of employment or income from project activities.

Donor supported programmes have witnessed progress in policy and institutional change. The World Bank projects on JFM in Uttar Pradesh and Uttaranchal provided for placement of funds with the community institutions for implementation of project activities. This was to give greater control to the local community over project activities and ensure higher transparency. The EU project on community forestry in Haryana attempts to link community institutions with the local Panchayats to provide them with legal sanction. JFM rules have been enacted in Uttar Pradesh and Uttaranchal to provide legal sanction and powers to the JFM committee to carry out their responsibilities.

Support to livelihoods of rural people, particularly the poor, and empowerment of marginal sections, including women, is an important element under projects supported by donors. However, the focus on empowerment of poor and women has been found difficult to translate into action in many projects. The main reason for this is the inadequacy of project design to effectively address the existing social and structural inequities. Projects rarely make the effort to identify the poor or provide scope and methods to reach them or address their concerns. This, combined with the lack of committed effort by project staff, helps to sustain, or even increase, the existing inequities.

The emphasis on NTFPs is a strategy to support livelihood of poor people. However, few replicable models, if any, have emerged on how forests could be managed for production of NTFPs. Policy issues related to rights over collection, procurement, storage, transport and marketing (especially for NTFPs with higher commercial value) still remain to be made 'collector' friendly. In spite of extensive discourse on the need to move away from 'timber-based' management to 'NTFP-based' systems under community forestry/JFM, the system of management has shown little change.

There is a growing consensus among donors that effective change for sustainable impact would be possible only by operating both at the community (micro) and at policy (macro) level. There is also an increasing realisation that it would be more worthwhile to build on existing institutions such as PRIs instead of creating new or parallel institutions. Targeting sectors instead of projects and focus on governance reform are increasingly visible in donor projects. However, with the experience of various attempts at institutional restructuring, it is becoming clear that the task needs careful planning under expert guidance and long-term technical support.

3.4 Community Forestry and JFM in Orissa

Although rich in minerals, forests and marine resources, Orissa is one of the poorest states in India, in terms of per capita income. The linkages between people and forests are economic as well as cultural. It is common to find villagers depending on forests not only for fuel wood and fodder, but also for income through sale of NTFPs, for wood to repair houses and construct agricultural implements, for shrubs to fence fields, and for food. Forests, together with labour, are the predominant, if not only, sources of income for many of the poor. In many parts of the state, income obtained from the sale of Kendu leaves and Mahua flowers forms a significant portion of the total annual income of households.

In this socio-cultural and economic milieu it is not surprising that Orissa has a long history as well as a large number of self-initiated community-based forest protection and management institutions, some of which have been in existence since last 50 to 60 years. The estimated number of villages involved in forest protection varies between 4000 and 6000. High forest dependence, scarcity due to forest degradation, existence of traditional community institutions, and high prevalence of forests within the revenue boundary of villages are often cited as factors that have facilitated initiation and spread of community- based forest management efforts.

Orissa formulated the first formal resolution on involvement of local communities for protection of natural forests in 1988. The state government came out with new JFM resolutions in 1993 and 1996. The 1993 resolution defined the institutional framework for JFM. The 1996 resolution attempted to consolidate the framework by providing for conversion of forests protected by villagers as 'Village Forest', and providing 'exclusive' rights to the members of the Village Samrakshana Samiti (VSS) on collection and marketing of non-nationalised NTFPs.

Not many villages involved in forest protection have converted to JFM in Orissa, even though it provides them with an opportunity to get formal recognition. Even though most of the villages/groups want some form of administrative, legal and financial support from the government/Forest Department, very few are willing to accept the terms and conditions of the existing JFM framework proposed by the government. Villagers perceive that the costs of adopting JFM outweigh the benefits. The conditions related to area of forest (about 200 ha.), type of forest (degraded), structure of the executive committee of the VSS (inclusion of *Naib Sarpanch* as President and Forester as Secretary), sharing of benefits (50 percent to the government from *final* felling) are strongly resented in many cases. Above all, the existing framework is seen to create an unequal partnership, which is

perceived to be heavily biased in favour of the FD leading to apprehension that the community would lose the management control they presently exercise over the forest. While the VSS has been made accountable to the FD for their activities, there is little the community can do to ensure the same from FD for its decisions and actions.

3.5 Key Issues in Community Forestry/JFM

Policy and Legal Framework

The diverse conditions under which community – forest linkages develop and exist indicate the need for a policy and institutional framework that recognise diversity. In places such as Orissa where the initiative for forest protection by communities precedes introduction of JFM, the need for a framework that provides greater control and power to the community organisations is significant.

Despite adoption of JFM resolutions, there have been few corresponding changes in the legal framework for forest management. Many provisions of existing forest rules and regulations often conflict with the demands of JFM. Over time a plethora of rules and regulations have created major ambiguities about the rights and concessions available to forest-dependent communities. The existing rules and regulations related to forest protection and management needs to be rationalised to provide space and scope for village-based strategies.

The legal status of JFM committees and the authority they have to make decisions impacting forests and to enforce them is a critical issue. Local institutions are delegated the management responsibility only through administrative orders. In the absence of a legal mandate, the authority is often challenged by offenders, which in the absence of support from FD can cause many problems. There have been round about efforts to provide legal validity and independent status to village level organisations by registering them under the Societies Registration Act, 1960. While it certainly makes the procedures of managing the organisation less cumbersome, it does little to add to the legal security needed by them in managing the forests. The issue of authority vis-à-vis Panchayats also needs to be resolved, particularly for forests that are located within the village boundary. [4]

The status of the micro-plan, which is the basis for forest management under JFM, is legally ambiguous. Government orders in, for example, Madhya Pradesh, state that the micro-plan would supersede any existing Working Plan for the allocated JFM area, are legally suspect. At some other places, a separate JFM Working Circle has been suggested under the Working Plans. Currently, under a Supreme Court ruling, no forest area can be worked unless it is covered by a management plan duly approved by the Government of India. Additionally, there is a complete ban imposed by certain states such as Orissa, on green felling. It is therefore not clear whether forestry operations can take place at the behest of a micro-plan. Due to this confusion, micro-plans are made more for general village development rather than for forestry operations.

Strengthening Community Institutions

Apart from creating an enabling legal environment, there is also a need to support and strengthen the JFM committees and self-initiated community efforts by helping them to become equitable and democratic institutions which can manage the forest for meeting their various forest-based needs. Changes in the community adopted management system are essential to make them more inclusive, equitable, representative, accountable and transparent. The concerns are mainly on account of their sustainability, ability to carry out the functions expected of them, and their inclusion of poor

[4] Attempts at developing a legal framework for JFM, such as in Uttar Pradesh, have been less than satisfactory as it has formalised an inequitable arrangement for sharing of responsibilities which is more difficult to change than an administrative order.

and women. The effectiveness of developing parallel institutions to Panchayat in the form of JFM committees also needs to be considered.

Various study findings indicate that women and other marginalised groups are generally excluded from the decision-making processes under JFM. The situation is often the same in self-initiated protection groups. In spite of clearly stated policy intent to provide space to women and poor in decision-making forums, the efforts made through reservation of seats on JFM committees have been mostly ineffective due to inherent structural inequities, weak strategies and lack of commitment.

Under JFM, the villagers are generally provided with the responsibility of protection of the forest resource, whereas the responsibility for technical management of forests is managed by FD. The resource, in order to be sustainable, needs to be managed on the basis of sound silvicultural principles, whereas in most of the cases JFM is limited to protection with little or no management operations undertaken to improve the quality and productivity of the forest. The concerns are greater in self-initiated protection systems, where the involvement of FD in management is minimal, and harvesting is mostly to meet the urgent or immediate needs of villagers for wood. There is a tendency to avoid cutting of wood, which sometimes results in practices such as leaf sweeping which are probably more destructive in the long run. The community institutions should be in a position to take informed decisions regarding utilisation of the forest protected by them. Traditionally, the silvicultural management systems have focussed on timber production and revenue generation, and there is not much clarity or consensus on how to manage a community protected forest where NTFPs are more important.

Institutional Framework for Partnership

JFM seeks to establish management 'partnerships' between local forest-dependent communities and the state for the sustainable management and joint benefit sharing of forests. However, the FD and the village community often view JFM quite differently. While the FD see JFM primarily as a means to rehabilitate degraded forests, villagers view JFM as a solution to the growing shortage of biomass, a means to ensure daily requirements of forest products and/ or a way to increase income. There are major disagreements among various stakeholders over the definition of this 'partnership'. Issues like nature and extent of devolution of management control and decision-making authority to the level of villages/Panchayats have been strongly contested. Despite the existence of forums for discussion at central and state levels, the states are still struggling to evolve a generic framework for equitable sharing of management responsibility between the FD and the local level institutions.

The extent of FD control within JFM is significant, whereas for the local institutions it is perceived to be too little. In most states village organisations under JFM have no autonomous status and can be dissolved by the FD. The transfer of decision-making authority to local institutions is perceived as reduction in power by FD staff. Overall, JFM is in the development context still largely regarded as a departmentally-driven, target-oriented programme which does not necessarily lead to village empowerment and increased control over forest resources.

Capacity-building of Forest Department

The new policy direction is still well ahead of the capacity of FD to implement. For FD to be able to work with a large number of diverse and scattered local institutions, radical changes in the institutional arrangements of FD are required. Structural reforms have been quite controversial. Unless the decentralisation of functions is supported by decentralisation of authority and power, it has little meaning.

The concept of JFM, which in its simplest form only requires the FD to organise the villagers and develop a system for regular interactions, has rarely moved beyond the administrative orders without the aid of any scheme or project. Most state orders and resolutions have not spelt out provisions for flow of funds for the JFM programme, except under various central government sponsored schemes. Budgetary allocations for JFM-related activities by the FD are lacking. Considering the scope of activities within JFM, inter-sectoral and inter-departmental linkages would provide the financial leverage to some extent.

3.6 Emergent Opportunities for Community Forestry in Orissa

Despite many issues remaining to be resolved to make JFM more conducive to local people, there are many factors that contribute to the potential of community forestry in Orissa, i.e.; presence of a large number of self-initiated village-level forest management institutions, existence of enabling government resolutions and rules for management of Village Forests, presence of a JFM steering committee at state level, and a large number of NGOs working on forest-related issues. Moreover, there are two relatively recent developments – one at policy level and the other at ground level - that present new avenues for supporting community-based forest management efforts in the state.

Devolution of NTFP Ownership to Panchayats

Under the 73rd Amendment to the Indian Constitution, the Panchayati Raj Institutions (PRIs) have been given the power to manage natural resources including forests. They have also been given ownership of NTFPs. While the exact nature and extent of Panchayat control over NTFPs still needs to be worked out, the policy shift has significant implications for JFM in the state. Although it has created opportunities for local communities to exercise greater control over natural resources and their extraction, it has, at the same time, created possibilities of conflict between JFM/self-initiated community institutions and PRIs. In the past, similar government resolutions on the issue were defeated by taking out commercially attractive NTFPs by declaring them as major forest produce instead. Apart from this, the ground reality is unlikely to change unless the primary collectors and the PRIs as well as community institutions are strengthened to carry out their mandated responsibility in a collaborative manner.

Confederation of Village-level Forest Management Organisations

At various places in Orissa confederations of village organisations involved in forest management have emerged. Such federations are organised at various levels, including Panchayat, district, blocks, Reserve Forests or a big forest block. Some have been facilitated by local NGOs or local staff of FD, and some are self-initiated with ground work done by local leaders. The motivation for such federations is varied, and has evolved with time and membership. Some federations stem from the need to have a more effective protection of large blocks of forests. Bigger groups organised at district level are intended to play the role of a pressure group. An attempt is being made by the state NGOs to facilitate the constitution of a state level federation, called *Jungle Manch*, of such smaller confederations. While the state level confederation is struggling to emerge as an effective representative of smaller groups at the state level, many of the smaller confederations are well-established. They perform several important functions including facilitating protection and use of forest, mediating internal and external conflicts, providing a platform for sharing of experience and learning among individual forest protection organisations, and representing collective concerns and needs to the local forestry administration. Born out of a feeling of inadequacy of timely and effective support from the local forest administration and their individual capability to deal with the threats, such confederations provide opportunities as a medium through which community stake can be formally incorporated at macro (policy) level and interventions strengthened at the micro level.

The state government is yet to give a formal recognition to such federations which would be essential before they can play a larger role in strengthening the existing efforts for village-level forest management. Though at some places their role is recognised by the local district administration, at many places they have not been successful in developing a working relationship with the FD. Some of the federations have registered themselves as a society in order to provide themselves with a formal identity. Under SGVSY, provisions for division level federations of village organisations exist. However, they are meant only for those villages which adopt the JFM guidelines. Also, there is a preference among the FD to form a separate federation, instead of building on the existing ones as it provides them with greater control. NGOs which have been mainly involved in providing outside support to such confederations at local level appear as individually too weak and collectively too disparate to effectively organise federations at the state level.

4. Water

4.1 Overview

India receives an average rainfall equivalent of 4,000 billion cubic meters but faces serious temporal and spatial water shortages. These shortages have exacerbated with rising demand for particularly irrigation. Contributing to the scenario is inefficient water management and use. The efficiency of surface water irrigation is estimated as low as 40 percent and although overall groundwater exploitation is only about 50 percent, resource-threatening exploitation levels have been reached in several locations. Subsidies for canal irrigation and power have encouraged inefficient resource use.

Water quality issues compound the problem. Deep borewells and handpumps, expected to address quality problems associated with traditional sources such as open wells, have become problematic themselves. Arsenic, fluoride, sodium and nitrate contamination have been evidenced with groundwater extraction from deep aquifers. Technologies for addressing these have been developed, but their applicability and cost in rural environments remain an issue.

Analyses of current problems point to inadequacies in the overall policy, legal and institutional framework. In India, the entire approach to water resources in the post-Independence period was geared towards resource exploitation through capital investments rather than equitable and sustainable water management. It is within this questionable approach that many of today's concerns are rooted. The deterioration of traditional water harvesting structures has been one major impact of this flawed approach.

The legal position, where water rights are aligned with land rights, offers little opportunity to correct the situation. Landowners 'mine' water resources without any statutory control. Regulation of water has been a politically sensitive issue and a Model Groundwater Bill has been pending action for over a decade.[5] At another level, the legal framework has proved rather weak in addressing inter-state water disputes.[6]

[5] Some argue that even the Model Groundwater Bill will fail to achieve desired ends, as it does not (some even say cannot) provide for monitoring millions of farmers across the country.

[6] States in India were organised on cultural-linguistic lines and overlapping hydrological boundaries provide a recipe for dispute (e.g. the Cauvery dispute between Karanataka and Tamil Nadu).

Current institutional arrangements in the water sector add to the challenge. Several institutions work in an un-coordinated fashion and often at cross-purposes. The national level ministries and bodies are responsible for policy and planning, but water resources are a state subject. At the state level, the Water Resources Departments (WRD) have the mandate to assess and plan for water resources and undertake irrigation projects. A second important stakeholder at the state level is the Public Health Engineering Department (PHED) entrusted with water supply. Within these two large institutions, operate several departments, sub-departments, sections and units. Their coordination levels are poor.[7] Contributing to the mixed record of sector institutions has been their inability to work with communities and deteriorating financial health. The latter is traced to existing tariff structures, institutional malpractices and the declining financial health of the state governments themselves.

There have been some encouraging developments in recent years. Sustainability and operation and maintenance (O&M) related issues are increasingly occupying attention and the need for tariff rationalisation, people's participation and groundwater regulation is gradually being acknowledged. These are echoed in the National Water Policy 2002 and the five-year plans of various states. However, the optimism generated by these developments needs to be tempered. Policy intent takes time to translate into practice and often suffers distorted interpretation at the intermediate and operational levels. Political will and popular support for tariff rationalisation and groundwater regulation is low. Most seriously, levels of awareness and capacity to realise a sustainable, equitable water-related agenda remain inadequate.

IWRM, with its wider treatment of water and institutional issues, could potentially solve many of the water-related problems in India. However, it remains weakly understood conceptually and is yet to be operationalised. Its demands on sector institutions are likely to be high, perhaps even unrealistic in the near future. As a result, donors, though committed to the IWRM agenda, have adopted a cautious approach.[8] In this situation, a twin-track approach in which immediate priorities are responded to while working towards structural changes, appears pragmatic. This would imply working within 'conventional' sub-sectors and innovating and improving in parallel. Along with intervention in the 'conventional' sub-sectors, efforts will be required towards capacity building at multiple levels to mainstream the IWRM agenda.

4.2 Water Resources Management

4.2.1 Overview

As mentioned earlier, India faces serious temporal and spatial water shortages that are worsened by rising demand, declining quality and poor water management and resource-use efficiency.

The present situation has been traced to a variety of reasons, of which the most crucial are: (a) traditional policy and institutional focus on resource utilisation rather than management, and (b) lack of regulation (including self-regulation) on inefficient water use. Government agencies, often uncoordinated, unsystematic and trapped in resource utilisation modes, have been largely unsuccessful in addressing the situation. The success of NGO and donor-driven watershed or water conservation interventions with community-centred processes offers some promise, but larger issues relating to

[7] For example, the PHED works towards water quality improvement while the Agriculture Department promotes use of fertilisers that lead to nitrate contamination.

[8] DFID is 'waiting for an opportunity to arise'. The Dutch have just formulated a district-based project around IWRM in Kerala, but acknowledge that it will mainly focus on drinking water. The World Bank notes that there is still a tendency to create enclave projects and not to address broader issues of water rights, groundwater, land-water integration, ecological flows, water quality and pollution control.

sustainability and scale cast a shadow. While water conservation initiatives appeared to gain centre-stage during the latter half of the nineties, the role of millions of farmers who actually manage groundwater resources has been limited even in these initiatives due to low levels of resource literacy on causes, consequences or choices. In this context, there emerges a case for building upon the momentum generated by watershed and water conservation interventions through locally developed and agreed mechanisms for sustainable and equitable water use.

Water management at the local level offers opportunities for community involvement in analysing, planning, negotiating and managing the resource. This can correct the unsustainable and iniquitous use patterns arising from the earlier focus on resource utilisation and development. Most villages suffering water shortages are found in the upper parts of river basins. In these areas, small water harvesting structures are considered the most appropriate and viable. These can potentially offer benefits of (a) water availability during the end of the monsoons to protect against crop failure; (b) groundwater recharge for improved drinking water availability during summer; and, (c) protective irrigation for *rabi* crops. Such local management systems have existed in several parts of the country but have been rendered ineffective over time by the dominant 'resource exploitation' mode of working. At the local level, their resurrection (though challenging), offers opportunity to demonstrate innovative approaches, engage with Panchayati Raj Institutions (PRIs) and other related community institutions with fewer institutional complexities and resource demands.

4.2.2 Policies

An encouraging development in recent years has been the recognition and attempt to address the fundamental issues impacting the water sector. This recognition is reflected in two key documents-the National Water Policy 2002 and the Revised Watershed Guidelines 2001. The National Water Policy 2002 emphasises the need for sustainable water resource management, conjunctive use of surface and groundwater resources, groundwater regulation and people's participation in management of natural resources. The latter, explicitly mentioning participatory irrigation management, is a marked change from the earlier version. Further, the National Water Policy 2002 considers user contribution and tariff rationalisation while discussing sector finances. In sum, the National Water Policy 2002 presents a positive picture though not without shortcomings. A similar observation can be made regarding the Revised Watershed Guidelines 2001. Again, these emphasise the much-cherished values of sustainability, equity, participation and transparency. Changes have been made to allow greater funding allocation and PRI involvement.

Whether policy intent expressed in these documents can be realised remains a moot question. Past experience suggests significant differences between (noble) policy statements and (less impressive) practice. For example, the objects of the National Water Policy 2002 vis-à-vis groundwater regulation and tariff rationalisation, though aligned with donor and expert prescriptions, are unlikely to find political and popular support. The earlier National Watershed Guidelines 1994 are another case in point. Hailed as revolutionary, these have failed to inspire actual performance for a variety of reasons including weak primary and secondary stakeholder capacities, existing socio-political dynamics and institutional imperatives.

In the IWRM context, it needs to be appreciated that the government's role as developer and manager of water resources has persisted throughout the last five decades. The fact that resource boundaries (basin, watershed) do not match administrative boundaries has hindered effective and sustainable basin-level planning and management. While the central government has voiced its intent (starting with the National Water Policy of 1987) to enable integration, there has been resistance from the states resulting in allocation-based rules for negotiation on surface water rights. These

are mostly population-factored and not resource or situation-based. Hence IWRM initiatives would require enabling policy and legislative change.

On another note, a major factor that has led to groundwater exploitation and iniquitous appropriation of water resources is the significant subsidisation of irrigation and electricity services. The reforms in these two sectors attempted during the last decade have encountered resistance from farmer lobbies.

The above is merely an illustration of the range of factors that account for differences in policy and practice. Thus, it is necessary that donors interested in water conservation and management accord priority to translating policy into practice rather than developing a preoccupation with influencing policy.

4.2.3 Government Initiatives

Watershed development is one of the large centrally sponsored programmes. Since 1995, watershed development projects have been implemented under new national guidelines using funding from a variety of centrally sponsored schemes.[9] While watershed development projects have led to the creation of water harvesting structures, the crucial aspects of water conservation and sustainable management have taken a back seat. The actual control of water resources at the village level still rests with a few large farmers and these programmes have not been able to offer arrangements and institutions to manage land and water resources sustainably.

The National Watershed Guidelines 1994 marked the shift from departmental works to the emphasis on people's participation. Village Watershed Committees (parallel institutions to the Gram Panchayats) were entrusted responsibility for planning, implementation and management of interventions with the role of line departments (such as Forests, Soil and Water Conservation, Irrigation etc.- all with experience of NRM activity) limited to facilitation. In practice, this has not happened. Local capacities were limited; the poor were diffident; people-line department relations were unequal; the guidelines were interpreted to suit vested interests; and, community mobilisation and training efforts were not systematic.

The other programme that encourages water conservation is the Accelerated Rural Water Supply and Sanitation Programme (ARWSP). About 20 percent of the funds under this programme can be used for water quality improvement and conservation. Most of this allocation is used for addressing water quality issues. The water conservation part of the programme is limited to ensuring the sustainability of drinking water supplies alone- precluding integrated management of village level water resources.

4.2.4 Donor Initiatives and Experience

The World Bank has been supporting a series of large Water Resource Consolidation Projects. Besides capital investment, these seek to address a range of institutional issues particularly those relating to comprehensive water resource planning, capacity building, institutional restructuring, sector finances and tariff rationalisation. These projects have tended to focus on medium and major irrigation with the Water Resources/ Irrigation Department being the key partner agency. The current

[9] The major programmes are: Drought Prone Areas Programme (DPAP), Desert Development Programme (DDP), and the Employment Assurance Scheme (EAS). Separate lines of funding are available from the Integrated Wasteland Development Programme (IWDP), the National Watershed Development Programme for Rainfed Areas (NWDPRA) and CAPART. The Ninth Five Year Plan (1997-2002) budgeted outlay for DPAP was Rs. 4.65 billion, DDP Rs.2.55 billion and the watershed component of EAS was Rs 217 billion. The state government's share in DPAP and EAS is 25 percent of investments whereas DDP is fully sponsored (100% costs) by the Government of India. The IWDP outlay for the Ninth plan was Rs 3.61 billion.

World Bank approach is to engage in water resource projects only where there is both political commitment and an ability of the Bank to link sector reform with comprehensive fiscal and administrative reforms in the state. Bilateral donors, on the other hand, have focused on less resource-intensive watershed and water conservation initiatives in selected locations, both with line departments (Department of Rural Development in most cases) and NGO partners.

Donors can justifiably lay some claim on influencing current policy and institutional approaches. Their efforts have been particularly instrumental in achieving recognition of the need for people's participation, capacity building, transparency, inclusion and sustainability. In the large Water Resource Consolidation Projects, there have been achievements towards drawing attention to, and initiating discussion on, wider resource management issues and legal, policy, and institutional and financial aspects. These have subsequently been echoed in various national-level guidelines and policy statements.

A common criticism of donor approaches, at least in the past, has been their preference towards working with village-level project institutions, rather than through the elected Gram Panchayats. This has tended to raise an anomalous and competing structure to the Gram Panchayat at the village level. The current portfolio of projects seems to have taken this on board with more substantive roles being envisaged for Gram Panchayats in the future.

While the contribution of donors in ensuring attention towards key sector issues is laudable, field experiments (despite some successful instances) have not always reflected this. In the Water Resource Consolidation Projects, a certain disconnect is evident (as the Bank has realised). In most instances, lending (often with repeater projects) has been to institutions that perform poorly and face huge, systemic challenges in reform. State-level institutions perceive the Water Resource Consolidation Projects primarily as capital works projects rather than opportunities for change.

In the watershed and water conservation interventions, performance has been impacted by weak primary and secondary stakeholder capacities and failure to recognise and address institutional imperatives, existing portfolio of rural livelihood options and local socio-political dynamics. As a result, capacity building efforts are far from adequate; village-level institutions and decision-making processes remain opaque and, the interventions unsustainable. The primary failing has been the limited recognition of the need for water management through locally negotiated and agreed water use arrangements. Further, donor initiatives have been highly resource and time intensive and issues of scale and replicability remain.

Donor interest in water management related interventions remains high and efforts in this direction will continue. There is an emerging view, particularly within DFID, that the conventional watershed and water conservation approach needs to be reconsidered to accord central space to livelihood issues. The potential to address the situation of the poor through conventional NRM approaches is questioned, given existing patterns of landownership, resource claims and individual capital investment potential. The case for exploring other livelihood options is made in this context. (See Appendix 4 and 5 for donor approaches and programmes).

4.2.5 Key Issues

On the overall situation of water resources, the key issues can be summarised as:

– The existing legal, policy and administrative frameworks do not operate in coherence with resource boundaries (basin, watershed) and IWRM would require changes in these to enable a resource-oriented approach.

– Due to temporal variations in water resource availability, groundwater regulation assumes critical significance. Existing legal and administrative mechanisms for such regulation are inadequate.

– The subsidisation of irrigation and electricity supply has impacted water resources adversely for such subsidisation offers no economic incentive for users to ensure end-use efficiency.

Watershed development programmes (during the eighties and nineties) have attempted to enable participatory planning and management of local water and land resources. However, experiences from these programs suggest that water conservation and management programmes need to pay more attention to:

– Developing, negotiating and agreeing on equitable, sustainable water management and use practices at the village level.

– Increase primary and secondary stakeholder capacities for water resource management and appreciate issues impacting participation, transparency, equity and sustainability levels.

– Enhance inclusive village level planning processes based on systematic assessment of resource availability and demand.

4.3 Rural Water Supply and Sanitation

4.3.1 Overview

Rural water supply is essentially a state subject. However, the central government has the dominant role in setting policy goals and standards which are aimed mainly at ensuring basic services and achieving health objectives.[10] At the state level, most government programmes are aimed at providing safe potable drinking water to all. Financial resources for this are available through the national Accelerated Rural Water Supply Programme (ARWSP). In addition to this, the state governments have also accessed institutional finance for rural water supply.[11]

Following the emphasis on safe drinking water provision during the International Decade for Water Supply and Sanitation Development (IDWSSD, 1981–1990), there have been increased financial investments in this sector during the Eighth (1991–1996) and Ninth Five-year Plan (1997–2002) periods. Despite good monsoons continuously for the last eleven years and enhanced priority to rural water supply, independent reports show drinking water scarcity in about half of India's villages. This is accompanied by an increasing number of habitations where water quality fails potable standards. What is even more distressing is that this gap has been increasing over the years, despite heavy investment. There has also been the phenomenon of habitations declared fully covered falling back to partial or non-covered status in subsequent surveys, thus putting in question the sustainability of sources.

The significant diversity in climatic and topographical conditions gives rise to the varied resource endowments and water quality related issues in different parts of the country. Thus water resource management issues differ widely from the Brahmaputra basin in the east to the Sabarmati basin in the west and this has implications on the options for provision and management of safe drinking water. Irrespective of this, the technical options to provide safe drinking water have been fairly

[10] This dominant influence arises from the fact that the central government is the largest source of funding for the drinking water and sanitation sector in India.

[11] From Life Insurance Corporation of India (LIC), Housing and Urban Development Corporation (HUDCO), and National Bank for Agriculture and Rural Development (NABARD).

standard across the country- handpumps, borewells and piped water systems. This reflects lack of emphasis in developing site-specific solutions that are manageable at the local level.

4.3.2 Policy, Legal and Institutional Framework

The policy of the government emanates from the constitutional duty imposed on the state, the National Water Policy that places first charge for resource use on drinking water and the stated development goal of 'Health for All'.

The living tradition- water as a natural right and free good- survives across much of the Indian subcontinent not only in customary practice, but also in popular belief systems. India's colonial legislative, water management and public health legacy is the crucial substructure on which current management and administrative practice has been built. This, accompanied by the high role placed on the state in governance during the first three decades after Independence, has led to (a) inordinate centralisation of the functions related to drinking water supply and (b) limited local capacity building for management.

Over the years, the central and state governments in their pursuit of development objectives and towards achievement of policy goals, have created large institutions (in terms of personnel and area of operations). These institutions follow centralised management procedures and often have overlapping functions that pre-empt convergence aimed at policy/ goal achievement. The latter day solution has been to run a 'mission' that coordinates and achieves this convergence. Thus one finds that the development goal of 'Health for All' requires the convergence between five departments at the central government! Also the issues of social intermediation and user participation and ownership that have been raised in recent times, do not seem to be within the inherent capacities of these centralised engineering institutions.

4.3.3 Government Initiatives

Accelerated Rural Water Supply Programme (ARWSP)

Although provision of safe drinking water and sanitation is the primary responsibility of state governments, and now more specifically of the PRIs, the central government has been supplementing these efforts by financial and technological inputs through the ARWSP. The ARWSP, which took a mission[12] approach in 1986, aims to provide safe and adequate drinking water to the rural population and follows a norm-based approach for targeting, coverage and monitoring.[13] The approach of the ARWSP is like a regular government programme with rules for matching funds from state governments and prioritisation of habitations. The difference with other programmes is the greater attention to coordination and monitoring and the technical support provided for research and development initiatives through sub-missions.[14] The RGNDWM has also been instrumental in bringing the state implementing agencies together to share experiences and absorb learning from successful initiatives.

The progress made with the ARWSP has been significant, but concerns of sustainability have cropped up in each subsequent review with the noted slippage of earlier fully covered habitations

[12] The Technology Mission on Drinking Water Management was introduced as one of the five Societal Missions in 1986, called the National Drinking Water Mission (NDWM) and later in 1991 the Rajiv Gandhi National Drinking Water Mission (RGNDWM).

[13] 40 liters per capita daily (lpcd) for humans; 20 lpcd additional for cattle in DDP areas; 1 handpump for 250 persons and water source within 1.6 km of habitation, 25 percent for Scheduled Castes and 10 percent for Scheduled Tribes.

[14] These sub-missions include, for example, eradication of guineaworm, removal of excess iron, and control of fluorosis, brackishness and arsenic.

(as per the per capita norm) to partially covered status due to non-sustainability of source, identification of emergent quality problems, etc. Moreover, the centralised manner in which programme implementation has been carried out in the states has only increased the burden on the state government to commit resources for O&M- resources that have not been forthcoming.

By the nineties, with the realisation that functionality and sustainability need to be ensured to make the substantial investments meaningful, the Mission embarked on a Sector Reform Program (SRP) that aims at empowering PRIs/ communities to generate resources, plan, operate and manage water supply schemes themselves in coordination with government agencies/ private sector/ NGOs. The key elements of this strategy are:

- Promoting a demand-driven approach.
- Institutionalising community participation in capital cost sharing (at least 10 per cent) and full cost of operation and maintenance.
- Village level capacity building for planning and management through setting up and empowering Village Water and Sanitation Committees (Watsan Committees).
- Integration of service delivery mechanisms in Watsan involving multiple agencies.

Since 2000–2001, 20 percent of the annual ARWSP outlay has been earmarked for states progressing towards sector reform. The SRP is currently being implemented in 63 districts of 26 states across the country. It is, in principle, a significant initiative that marks a departure from the conventional allocation-based rural water supply programmes. Substantial funds have been placed at the district level and a nascent but emerging awareness about reforms in the sector is evident. However, the different institutional arrangements decided upon by the states, lack of clarity of institutional roles and continued primacy of the executing department[15] indicates that much remains to be done, particularly in eliciting user participation and ownership and designing equitable and financially sustainable systems. A review carried out by WSP-SA of the progress in four states suggests that the interpretations of programme principles by the executing departments have not provided the necessary space for PRIs or user groups to prepare for designated roles.

The *Prime Minister's Gramodaya Yojana (PMGY)*, started in 2000–1 and envisages an Additional Central Assistance (ACA) for selected basic minimum services. For the rural drinking water component of the PMGY, the implementation will follow the ARWSP guidelines, earmarking a minimum 25 percent of the total allocation for water conservation and sustainability of the drinking water sources in specific drought prone areas. The remaining part is to be utilised for tackling quality related problems and for providing safe drinking water to habitations that are not yet, or only partially, covered. Thus, the approach is the same as in ARWSP, but with a provision (allocation) that is focused on sustainability issues and quality.

While these programmes and funds have been earmarked by the central government, the implementation of water supply and sanitation, being aspects of public health, are deemed to rest with PRIs and fall within the purview of their obligatory functions. However, in the rural areas the implementation function has stayed with the line departments. This has come about largely due to the dependence of PRIs on the state government for finances and their limited role in planning.

[15] The 'nodal' agency plays multiple roles. In most states, these agencies are represented in the governing and executive institution at the state and district levels, hold the responsibility of fund drawal and disbursement, provide technical support to prepare designs and estimates and also carry out information, education and communication (IEC) and human resource development (HRD) activities, thus causing an inversion of scheme principles.

4.3.4 Donor Initiatives and Experience

The IDWSSD was instrumental in focusing government and donor attention to the failure to provide safe drinking water to the population. As a result of the introspection on issues affecting the achievement of these goals, there was a shift in donor focus from implementation and strengthening of executing agencies to a more proactive stance. Here, the emphasis was on piloting sustainable initiatives towards building, demonstrating and advocating changes in the service delivery model.

The initiatives of the Netherlands (Andhra Pradesh, Kerala), Danida (Karnataka, Orissa), World Bank (Karnataka, Uttaranchal) and the Control of Diarrhoea Diseases-Watsan initiatives of UNICEF in selected districts across the country highlighted the following:

- Role of community participation in planning enhanced ownership and commitment to O&M.
- Communities empowered with information on technical options, costs and training needs were in a better situation to opt for drinking water systems that could be managed locally and afforded (user charges).
- Locally planned and managed systems afforded more opportunities for mediation between users. This made it easier to tackle the problems of competing uses at the local level, for example, rules limiting use of tank water for irrigation during periods of stress in water availability.
- The technical provisions with the state implementing agencies (e.g. handpump, powered borewells with mini-tank) and the norm-based solution did not often satisfy spatially distributed users, but emphasis on small changes to existing technologies (redesign of handpump to enable local maintenance) and a mix and match of solutions (rehabilitation where possible and new construction for the excess demand; piped water systems for household supply and handpumps for groups of households) was required to satisfy the needs of the habitation.
- Sufficient emphasis on training could ensure development of local skills, but the felt requirement for continued support (especially for augmentation or replacement) after the project period was left unaddressed.
- Serious quality issues relating to fluoride, iron etc.were still hindrances; affordable and manageable options need further work to be acceptable.

While the different pilots offered broadly the same options and chose community participation as the basis for these interventions, the degree of emphasis on social mobilisation and empowerment varied across these pilot initiatives. Also, while the initial initiatives depended on NGO facilitation and formation of user groups, the later experiments have sought to involve PRIs.

The success of some of these initiatives and the growing question of financial and technical sustainability of investments in the sector have influenced policy thinking and programme design in the national context. An examination of the donor initiatives seems to indicate high intensity in terms of resources (time and human) for achieving these working models and the question of scalability and replicability in different social environments. (See Appendix 4 and 5 for donor approaches and programmes).

4.3.5. Sanitation

Only about a tenth of India's rural households reported access to toilet facilities in 1991. Reflecting the fundamental problem of low demand are more recent estimates (NSSO, 1998) that suggest only 18 percent toilet coverage among rural households. This represents an enormous challenge with

implications for the health and socio-economic status of rural households, besides imposing significant costs on the national economy. The poor, women and children are the most affected by the current situation.

Although localised efforts to improve sanitary conditions in rural areas were initiated as part of the nationalist movement, systematic efforts to engage with the challenge on a large scale have rarely been evidenced in the post-Independence era (GoI, 1992). The rural sanitation agenda has always been overwhelmed by the strategic focus on extension of water supply coverage (Samanta, 1997).

In spite of the subsidy-driven Central Rural Sanitation Programme (CRSP- the country's largest sanitation programme) and several state government programmes, there has been limited success in achieving desired levels of rural sanitation coverage. The key factor accounting for this has been the low emphasis on demand generation and awareness creation activities, besides limited resource allocations, poor resource utilisation and non-availability of appropriate technological options (GoI, 1992). Some instances of success have been reported in NGO and donor-driven initiatives, notably the Rural Sanitary Marts (RSMs) with their emphasis on zero-subsidy approaches supported by demand-generation and awareness-creation activities and a menu of technical options. However, replication has been difficult and the experience of introducing key features of donor and NGO-driven initiatives in the Restructured CRSP remains mixed (TARU, 2000). Demand remains low. Latrines occupy low investment priority among households and the drinking water agenda remains atop institutionally. The fact that both subsidy and zero-subsidy approaches have failed to yield expected results underscores the challenge and the need for examining fresh approaches. In this regard, there exists some inertia among key actors in the sector, lending an additional dimension to the challenge.

4.3.6 Key Issues

The high order of investment requirements for rural water supply and the financial status of sector institutions have received significant attention in policy making fora in recent times and there is evidence of increased engagement with issues concerning institutional reform and restructuring and local need-based planning. A transition from supply-driven to demand-responsive approaches has been signalled (with the centre taking the initiative and offering the incentives) and would necessitate an enabling legal and policy framework and strategic decision-making processes at local levels. However, it is anticipated that this transition would require enhanced support to provide direction and operational strategies for:

- Current implementing institutions to manage the transition path and strategy from the present supply-side approach to a demand-responsive one.
- Building internal capacities of local institutions for strategic decision-making processes.
- Enabling legislation and economic incentives for local management control and to move towards integrated water planning, management and allocation.
- Broadening the technology options suited for diverse terrain conditions, resource endowments and resource usage patterns and involving users in deciding on a system that they can pay for and manage.
- Providing information on choices and strategic options to institutions (more local in nature) who are being empowered by policy to plan, manage and operate water and sanitation systems.
- Ensuring the financial sustainability of local government institutions in the face of rising costs of

supply and O&M, through prudent financial management and increased system efficiencies.

- Making space for involvement of local private sector in design, execution and taking advantages of financial efficiencies arising from competition.
- Building awareness of household and environmental sanitation and hygiene behaviour and its impact on health, and the need to integrate water supply and sanitation initiatives
- Bringing the focus towards the poor and women as partners in planning, implementation and management of water and sanitation delivery systems.

5. Panchayati Raj Institutions and Natural Resource Management

The process of devolution and decentralisation has been slowed by fiscal, administrative and political centralisation and centre-state conflicts since Independence. Progressive measures in states like Gujarat, Maharashtra and Karnataka notwithstanding, the process of devolution and decentralisation received genuine fillip in the early 1990s with the enactment of the 73rd (rural) and 74th (urban) Constitutional Amendments. Karnataka, for example, passed a much heralded law in 1983 with two important features: the president of the Zilla Parishad (District Panchayat) was given the rank of a Minister of State with control over the Chief Executive of the district[16] and 25 percent of the seats were reserved for women. These amendments effectively created a third tier of governance that was hinted at but not given form in the Indian Constitution. Local institutions were devolved of planning powers, financial resources and implementation control (NIRD, 1995; WB, 2000). A related legislation is the Panchayats (Extension to Scheduled Areas) Act (PESA) 1996. PESA extends the provisions of Panchayats to the Schedule V Areas (mainly tribal-dominated areas) and enjoins the states to pass appropriate legislation for this extension, keeping consonance with customary law, social and religious practices and traditional management practices of community resources (ISS, 2000).

Decentralisation is expected to provide a more accessible, transparent, accountable government besides empowering the disadvantaged, developing fresh political leadership and ensuring a local voice in planning and implementation. The Constitutional Amendment has been hailed as an opportunity for wider real gains and multipliers to sustained institutional reform (WB, 2000). The recent trend towards empowerment of Gram Sabhas (village electorate) is considered another positive step. Consistent with Gram Sabha empowerment, some states have started public hearings, social audits and other mechanisms for building transparency. These are in the early stages of evolution but present significant opportunities for introducing inclusion, transparency and accountability into Gram Panchayat functioning.

The key Panchayat functions envisaged in the 73rd Constitutional Amendment that relate to the water sector include: minor irrigation, water management and watershed development (Entry 3), drinking water (Entry 11), health and sanitation (Entry 23), fisheries (Entry 5) and maintenance of community assets (Entry 29). This enjoys support in the National Water Policy 2002 which states

[16] An Indian Administrative Service officer with about 15 years of service.

that 'water user associations and local bodies such as municipalities and Gram Panchayats should particularly be involved in the operation, maintenance and management of water infrastructures/ facilities at appropriate levels progressively with a view to eventually transferring the management of such facilities to the user groups/ local bodies.' Increasingly, Gram Panchayats are assuming responsibilities for managing small tanks, fishing rights and hand pumps. The experience so far is mixed for a variety of reasons detailed below.

Pursuant to the Constitutional Amendments all states have enacted conforming legislation, agreed to formation of the necessary state, district and sub-district level institutions, faithfully followed the reservation policy and held local body elections as mandated (Choudhary and Jain, 2000; ISS, 2000). These measures, at one level crucial, have however failed to yield the desired results owing to hesitant progress on other important and complementary aspects. This is likely to impact the role of Gram Panchayats in water-related matters, as it does regarding several other issues.

The Constitutional Amendment mandates decentralisation but leaves key decisions relating to the extent and pace of decentralisation and sectoral, administrative and fiscal restructuring to the states. Thus, powers devolved to local institutions remain selective and unclear in several cases and often in conflict with those of line departments. The ambiguity in devolution of powers is compounded by the lack of rules and bylaws specifying the conduct of daily affairs by local institutions (ISS, 2000; WB, 2000). There has been a marked reluctance to hand over administrative control of relevant departments to the local institutions and even in instances where such control has been allowed, local institutions rarely exercise authority over resource and task allocations. Bureaucratic and political resistance thus continues to impede the decentralisation process.

With little or no administrative control over various departments, there have been few opportunities for local institutions receiving the necessary and much needed technical, managerial and general support for undertaking planning and implementing roles. Unless the capacity of Panchayats are built systematically and urgently, the decentralisation potential will remain unrealised and the 'failure' of Panchayats will be used to argue for a reversal of the process. A trend towards this has already been noticed in some states where O&M responsibility for drinking water facilities was thrust on Gram Panchayats without adequate preparation and later withdrawn citing poor performance.

At the micro level, the Gram Panchayats continue to be instruments of oppression with the old, well entrenched and exploitative order not inclined to relent, thus leading to concerns over decentralisation, corruption and the inclusion of the poor and vulnerable in local decision-making processes (WB, 2000). This could have implications for the role of Gram Panchayats in water-related matters, especially since the Gram Panchayat's interests may be tied to those of the landed, water exploiting class.

Another key concern relates to fiscal devolution. Though State Finance Commissions (SFC) have been established and have made recommendations regarding the devolution of expenditure responsibilities, tax powers and principles for determining grants-in-aid to be made available by state governments to local bodies, their recommendations have met with a lukewarm response. Acceptance of recommendations by state governments has been gradual and sometimes deferred. In other instances, allocations have not followed SFC recommendations nor has the recommended disbursal method been followed (ISS, 2000). The availability of untied funding does however suggest possibilities for utilising such funds for critical water-related investments. The trend of parallel programme institutions with higher resource bases, notably village watershed committees, has further impacted the Panchayats bypassing them in most instances.

Decentralisation may be expected to make a significant impact on the management of resources including water, albeit in the long run. This would necessitate significant capacity building effort and mechanisms to ensure inclusion in Gram Panchayat decision-making processes. With such support and mechanisms, Gram Panchayats can be expected to negotiate and enforce sustainable water use practices, resolve conflicts and assume management responsibilities for water-related infrastructure. Complementary efforts will however be required to strengthen user groups to create stake and ownership at the sub-Gram Panchayat level and maintain pressure on Gram Panchayats to address equity and transparency concerns.

Some of the above impediments and the uneven and torturous processes of change are understandable given the likely threat decentralisation poses to the existing politico-administrative set-up and its vested interest in maintaining the status quo. However, there is no denying the opportunities the current decentralisation process presents in terms of developing a culture of participation and consultation, providing elements of durability, dignity and sustainability to the development process and widening the scope for the political participation of women and other marginal and vulnerable groups (WB, 2000). Both political processes and development programmes will have to engage with decentralisation issues over the medium term in India.

6. Proposed Strategy for Sida Support in the Field of Natural Resource Management

6.1 Goal: Improve Livelihoods and Well-being

Given that Sida' s overall goal is to 'raise the standard of living of poorer groups of people in the world', it is proposed that the goal of the Sida natural resource management programme in India should relate to this. Thus, it is suggested that the goal should be to:

– Improve livelihoods and well-being of the poor through sustainable and equitable management of forest and water resources.

As described in Section 2, a sustainable management objective alone cannot ensure sustainable livelihood outcomes for the poorest. Therefore, it is important that equity is built into the goal itself. This will ensure that programmes and activities focus on pro-poor strategies and build in access and equity issues such as water rights, prioritisation and use at the outset. This is vital to programme success and addressing overarching poverty alleviation goals considering the nature of, and nexus between, social and power relations and resource claims in rural India. Both livelihoods and well-being need to be incorporated, given that livelihoods often have a productivity-based connotation whereas well-being is a broader term encompassing aspects of quality of life including, for instance, health benefits and time saved from access to clean water supplies.

Understanding poverty and vulnerability, and particularly the link between natural resource management and poverty as outlined in Section 2, would be an essential pre-requisite to achieving the outlined goal. Poverty analysis needs to be built into project design and mechanisms developed to identify and include the poor, address their concerns and link this to strategic and policy issues. Rigorous monitoring and impact assessment should follow a commitment to this goal.

6.2 Purpose: Institutional and Policy Impact

Given that Sida is interested in supporting the water and forestry sector and strengthening the decentralisation process consistent with such support, it is suggested that the overall purpose of the NRM programme should relate to policy and institutional aspects seeking to:

– Contribute to the development of water and forest policies and practices that are sustainable and conducive to the poor and enhance their inclusion in the decentralisation process.

Whether a small donor like Sida has an overall impact beyond projects will, to a large extent, depend on the effectiveness of field implementation and links created to policy and wider institutional issues. It is very unlikely that Sida can have a direct influence on policy matters without demonstrating the need for policy change through work on the ground. Instead, the strength of a donor like Sida lies in innovation, experimentation, and flexibility of programme design that can reflect on policy issues and need for changes.

6.3 Objectives

The following objectives are proposed for the Sida natural resource management programme:

– To strengthen the capacity of Panchayati Raj and related community institutions to conserve, manage, and use water and forest resources in an inclusive, pro-poor, and sustainable manner.

– To improve the livelihoods and well-being of the poor through increased access, control and better management of water and forest resources.

– To facilitate development of policy, programmes and practices consistent with the principles of Integrated Water Resource Management (IWRM).

These objectives are further detailed in the various programme options outlined in Section 7.

6.4 Thematic Areas and Approach[17]

Strengthening IWRM policy and practice and the decentralisation processes, both central to Sida's interest in the NRM sector, offer a range of opportunities and themes to engage with. Support to the decentralisation process, in any nature and form, would be consistent with the articulated agenda of various stakeholders, including the state governments. The conceptual underpinnings of IWRM are, however, weakly understood. Further, issues relating to institutional arrangements for operationalisation and appropriate scale for community involvement vis-à-vis IWRM remain problematic. This would necessitate that more conventional themes and opportunities, such as those relating to water conservation and management and drinking water supply as detailed in Section 7, be used as an 'entry' for IWRM.

In view of the complexity of IWRM and Sida's relatively limited involvement in comprehensive water resource management in India to date, Sida's role is best played as a donor that adds value to the water sector and IWRM. This can be most effectively achieved through sub-sector programmes consistent with IWRM principles that can be linked to and reflect the need for policy and institutional change.

[17] The remaining part of the proposed strategy will focus on issues related to Sida collaboration around water since Sida's interest in forestry, if at all, is confined to a community forestry programme in Orissa.

It is proposed that Sida continues support to the rural drinking water sector with the objective of supporting the sector reform process and work through PRIs. Sida should also build on and expand its support to water conservation management through links with PRIs and promotion of more rigorous pro-poor management systems. Further, Sida can play a key role in promoting IWRM in India through awareness building and increased knowledge. These thematic areas have been recommended because of opportunities they offer to address livelihood and well-being issues, involvement of PRIs and related community based institutions. They also offer potential for linking to the overall IWRM agenda. The rationales and objectives of these thematic areas are elaborated in Section 7.

Considering the scale of central and state government funding to development programmes allied to natural resources management/water in India, Sida funding is not likely to influence programme or policy orientation, unless it is strategic in intent and creates space to enhance key performance parameters. An overview of the programmes, the current orientation of policy (towards local planning, empowerment and the factoring of resources as economic good) and analysis of ground realities, suggests that one of the critical gaps is in the actualisation of decentralised administration principles. Sida should aim to work in this strategic niche by utilising its funds in partnership with state government and NGOs to build working models of decentralised water projects. It would be pertinent to work with the state government for establishing support for necessary changes in the planning and administrative framework thus creating space for empowered initiatives, ensuring the utilisation of central and state government funding for physical activities to the extent possible, while spending on local capacity-building.

Given the need to actively engage with Indian counterparts to create strategic programmes, Sida's approach to development assistance must necessarily be proactive. Working with poverty, decentralisation, PRIs and water management will pose many challenges and will require building of knowledge and expertise within both Sida and other stakeholders. At the outset it will be crucial for Sida to ensure that various programmes and activities being built up relate to the objectives of the sector strategy. Hence, the team would caution against reactive forms of assistance in the initial stages as this assumes an environment that can generate relevant and effective interventions without too much guidance. Gradually, it may be possible for this to evolve.

6.5 Institutional Framework

There is a wide range of institutions that need to be recognised and analysed while exploring interventions in the water sector. These include (public) water sector institutions/ line departments, NGOs, private operators and training and research institutions. Each of these offers their own strengths and opportunities, rendering them suitable for specific roles. Sida's expressed commitment to inclusive, pro-poor, transparent and accountable functioning by strengthening the decentralisation process adds an additional dimension to the complex institutional matrix.

There exist two major challenges underlying the complex, and often inhibiting, institutional environment. The first relates to the transition to an integrated water resource management concept. For decades, institutions and their structures and processes have been geared to a water resource development and exploitation/ utilisation model. A sustainable water resource management orientation would require significant awareness generation, capacity building and institutional strengthening. Secondly, inclusion, transparency and accountability have often been found lacking in the working of public institutions, including PRIs.

Panchayati Raj Institutions (PRIs)

The 73rd Constitutional Amendment and the decentralisation process it has triggered nation-wide offer opportunities of engaging with PRIs, particularly the democratically elected Gram Panchayat at the village level. This could enable building elements of participation and inclusion in various development processes. Increasingly being entrusted with planning powers, financial resources and implementation control (though slowly and with differences across states), Gram Panchayats can potentially assume planning and decision-making roles with regard to their immediate natural resource bases. In the case of water, their role can be crucial in mediating and enforcing sustainable water management practices, resolving water sharing disputes and maintaining village-level water-related infrastructure.

While there can be several multipliers in working with PRIs, particularly the Gram Panchayats, their limited capacity to assume substantive responsibilities needs to be addressed. A well-designed capacity building effort would be an absolute essential before working with PRIs. Enabling a better understanding of the water resource situation, its use/ abuse and measures necessary for ensuring sustainable management of the same would be crucial to empower PRIs with the necessary knowledge to reflect on their own circumstances and decide the way forward. Participatory water audits offer an opportunity in this context. This should ideally be supported by awareness building among PRIs regarding their own rights, duties and obligations, especially vis-à-vis various government departments. PRIs equipped with the necessary understanding of their rights and departmental working and processes can be expected to negotiate better with departments with a less-than-desirable culture of service provision. Such capacity building can be expected to yield benefits beyond the water and NRM sectors.

The uneven pace of decentralisation and devolution across various states, the less-than-enthusiastic response of the higher political class and the bureaucracy involved in decentralisation initiatives and ambiguity in operational directives that leave PRI roles, rights and obligations unclear, all need to be factored in during programme design.

In addition to capacity-building, mechanisms for ensuring inclusion, transparency and accountability, there is another area that needs attention. This need arises from the dominant influence traditional caste-based structures have exercised in the PRIs, including the Gram Panchayats. In the case of water, the interests of the land-owning water-exploiting class are aligned with these dominant influences. Strengthening of the Gram Sabha (electorate) and user groups based on shared interests in water use and management would be required in this context. There are of course real dangers in user groups being dominated by the landed. An arrangement whereby they are accountable to the Gram Panchayats can address this issue. The situation visualised is where the Gram Panchayats and user groups form part of a healthy checks and balances system.

User Groups

Historical evidence points to the marginalisation of the poor and vulnerable in PRI decision-making processes. With the interests of the landed water-exploiting class aligned closely with that of the Gram Panchayats, there emerge concerns regarding inclusion, transparency and accountability in water-related interventions. This suggests the need for a significant role for the Gram Sabha and formal/ informal user groups within the Gram Panchayat. It is only through an empowered Gram Sabha and user groups based on shared interests in water use and management that desirable levels of inclusion of the poor and transparency and accountability can materialise.

Given the tensions that have surfaced between Gram Panchayats and project-driven user groups in recent times, an appropriate way forward would be to envisage them within the Gram Panchayat

umbrella as its sub-committees. This can allay Gram Panchayat apprehensions regarding the emergence of alternate power structures without diluting the demands placed on it by an empowered Gram Sabha and user groups. Further, the emergence of user groups of the landed, a dominant class cannot be ruled out. It is in this context that the need for user groups to operate within the Gram Panchayat umbrella assumes additional importance. Gram Panchayats can have a role overseeing the user groups, thus translating into a robust checks and balances system. Furthermore, empowered Gram Sabhas can be expected to extend their influence on Gram Panchayats in spheres other than water, thus building the social capital of potentially excluded groups. They may also emerge as vibrant groups that can engage with, and demand more responsive behaviour from, line departments.

Capacity-building of user groups will be as crucial as that of the PRIs. Besides serving operational purposes, such capacity-building can create 'water leaders' at the village level, with whom local water knowledge will rest, be shared and propagated. Such a body of knowledge will be important given the possibility of change within the Gram Panchayat dispensation.

Government Departments

Partnerships with government departments provide an opportunity for incrementally mainstreaming innovative approaches and ways of working. 'Successes' arising from such partnerships are more likely to be echoed in policy. Thus, even reasonably small interventions undertaken with government departments can potentially influence the agenda in a larger geographical and institutional context.

Though institutional arrangements and nomenclature vary across states, there exist three major government departments with the mandate for decentralised governance and the water sector: Panchayati Raj and Rural Development (PR&RD), Water Resources Department (WRD), concerned with overall resource issues and irrigation) and Public Health Engineering (PHED) concerned with drinking water). Of these, the Panchayati Raj and Rural Development Department assumes additional significance given its dominant role in determining the nature and pace of the decentralisation process. The PR&RD Department is further entrusted with a range of development schemes (offering convergence opportunities) and maintains the maximum contact with PRIs on a day-to-day basis. The PR&RD Department is thus the most evident counterpart within the government. The Water Resources Department and the Public Health Engineering Department have crucial facilitating roles to play, both in terms of convergence of funds and technical assistance. This is especially important in the light of the proposed transfer of line department functionaries to the PRIs. However facilitating roles, as opposed to implementation, may be difficult to reconcile to for the WRD and PHED, especially if funding is routed through the PR&RD Department.

Another key institution is the District Rural Development Agency (DRDA). It performs the coordinating function at the district level and often routes the funding for various watershed and wage employment programmes. It offers an opportunity for district-level coordination of inter-departmental efforts and flexible funding allocation across locations to converge with donor efforts. However, the CEO, local socio-political situations and traditional ways of government working often determine the efficacy with which the DRDA functions.

The current departmental context presents several challenges. It is widely recognised that the multiple units and sub-departments within the nodal water sector institutions identified above often function in isolation or at cross-purposes. Coordination mechanisms are few and largely limited to state-level committees. District-level operations remain uncoordinated. This is a key challenge in adopting a wider perspective on the water situation and moving towards IWRM. Some states, notably

Madhya Pradesh, have experimented with the 'Mission' mode for watershed development where personnel and expertise from various departments are drawn into a special project vehicle. The results of such experimentation, though positive on occasions, need to be viewed in the light of the fewer mainstreaming opportunities they present. Coordinated departmental effort would remain a significant challenge. The various options for enabling coordination at the state and district level would need to be a key area for analysis and discussion at the project design stage.

NGOs

NGOs possess strengths in the areas of community mobilisation, training and capacity- building and, to a lesser degree, in implementation of physical activities. More importantly, NGOs have shown themselves to be open to innovation and experimentation and to promoting inclusive, transparent and accountable functioning. Given this background, clear roles can be visualised for NGOs in Gram Panchayat, Gram Sabha and user group strengthening. Such roles can be assumed by NGOs in bilateral initiatives as well as those entrusted directly to them. NGOs can also act as effective 'watchdogs', assisting in the monitoring and evaluation of departmental efforts and assessment of PRI and user group decision-making processes.

Further, innovative approaches can be initiated through NGOs in select areas. These can act as demonstrations from which learning can be internalised before scale-up through the larger government system. Experience suggests that good quality NGO work has influenced government policy and approaches, though indirectly. It is important that NGOs are supported to undertake innovative work in a small area so that the experience can inform a wider intervention that supports a large clientele. Sida's existing partnerships with well-recognised NGOs offers opportunities in this regard, particularly in states where the government policy and institutional environment appear challenging. It is important to note that NGO technical capacities may often be wanting, necessitating training and capacity-building in some instances.

Private Sector

Private sector participation in service provision and O&M at district and village level has proved crucial in the past to the scale up of water sector projects through, for example, production, drilling and support to the UNICEF Mark II/ III hand pump scale up. Micro and small-scale local enterprise provides the bulk of the contracting services for public works and water and soil conservation measures to line departments. With the slow transfer of the oversight and management of these processes to Gram Panchayats and other community institutions, considerable positive capacity building will be required in the areas of technical specification, procurement, management and quality control. Since current departmental functioning is often far from 'best practice', the opportunity of strengthening 'vendor' development, transparency and efficiency of procurement and local control through NGOs or other alternate mechanisms could be explored as an area of potential support.

Research Institutes

Independent research, training and advocacy institutions with a close linkage with government provide an effective way to enable policy change with limited investment. With the liberalisation of government rules, various central and state universities, research laboratories and Academies of Administration (e.g. Lal Bahadur Shastri National Academy of Administration at Mussorie) have both increased autonomy and ability to act as agents of change. Limited short-term investment on a project basis to build focused capacities for policy and consulting support as well as research and training have proved to be effective investments in the past. Since these institutions are perceived to

be a more 'neutral' platform than government agencies, a structured and positive dialogue between various stakeholders becomes possible. This offers opportunities for opening up the water discourse and addressing emergent issues in the resource/ technical and institutional domain (for example, the relative appropriateness of Gram Panchayats and Water User Associations).

In addition to the various central and state universities, research laboratories and Academies of Administration, there exist other research facilities as well. The latter are often poorly staffed and equipped and lack linkages for knowledge gathering and transfer to local people and institutions. Administrative inertia has meant that knowledge is often outdated. Areas of work such as small water technologies and Geographical Information Systems (GIS) have potential for usage at village level, but have to be amplified and modulated through research institutions and NGO collaboration.

Institutional/ Stakeholder Analysis

While the above offers a broad understanding of the institutional context, challenges and opportunities, it would be important for Sida to undertake an institutional analysis when designing a programme to understand the interest and stakes of various institutions and the roles that they could potentially assume.

6.6 Geographical Location

The overall guiding criteria for Sida in selecting geographical areas should be:

- High incidence of poverty that can be impacted by water sector interventions.
- An enabling reform and decentralisation-oriented environment.
- Limited donor support for water-related activities.

Several states were not considered among the potential geographical areas for Sida intervention. These were relatively developed (Gujarat, Haryana, Maharashtra and Punjab), politically unstable (Jammu & Kashmir and the North-east) and flushed with donor funds (Andhra Pradesh). Others presenting significant socio-political challenges (Bihar and Uttar Pradesh) and those with a special environment difficult to replicate (Kerala and West Bengal) were also not considered.

The states analysed for selecting geographical areas for potential Sida interventions were Chattisgarh, Jharkhand, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu and Uttaranchal. Among these, Jharkhand, Orissa and Uttaranchal were found to present limited opportunities.

Uttaranchal, in spite of the energy of a new state and a history of strong people's collectives, is not proposed as a potential state by the team. Poverty levels are low relative to other states and the PRIs inherited from Uttar Pradesh have yet to stabilize. The specific hilly, agro-climatic environment does also not provide learning for replication and scale-up in other geographical localities. Jharkhand and Orissa have high levels of poverty and need for interventions. However, the sector policy and institutional environment in these states remains challenging and uncertain, as is the commitment to decentralisation. Further, the poor parts of Orissa have significant donor support and a succession of government programmes aiming to address poverty (the latter have met with limited success to date).

Among the states explored, it is suggested that Sida considers support to Chattisgarh, Karnataka, Madhya Pradesh, Rajasthan and Tamil Nadu. A table below summarises various features of the different states.

- Chattisgarh, carved from Madhya Pradesh, has high levels of poverty with significant dependence among the poor on the natural resource base. It possesses the energy of a new state and has inherited the forward-looking PRI policy environment of Madhya Pradesh. Donor presence in the state, especially in the water sector, is limited though there has been some recent interest.
- Karnataka has pockets of poverty. The state has a favourable policy and institutional climate and history of decentralisation and NGO-inspired innovative approaches to NRM. Donor interest in Karnataka is high but niche opportunities such as tank management (as being considered in collaboration with Oxfam) can ensure value added by Sida.
- Madhya Pradesh has high levels of poverty with a vast section of the poor dependent on water and forestry resources. The institutional and policy environment is widely recognised as conducive and the state government has shown itself to be open to innovative ideas. A vibrant NGO community offers another advantage. Donor presence is significant, but there is little envisaged in the water sector that could enable intense involvement and development of PRIs.
- Rajasthan has high poverty levels in pockets and substantial problems of water availability. Although lagging behind reform labelled states, the government has committed itself to the decentralisation process. Donor interest has declined over the years. Rajasthan offers opportunities for building on existing Sida partnerships with NGOs and UNICEF.
- Tamil Nadu has scattered areas of poverty and water problems. While the political environment in the state has been polarised during the last three decades and populism is an inherent risk, the directions have been stable; the bureaucracy and NGOs have exhibited good speed in adapting to and internalising the emerging strategy changes, also reflected in projects on the ground. The NGO base is large and vibrant. Earlier Swedish partnership with the Water Technology Centre (WTC) Coimbatore can be built upon.

As the state-specific features suggest, in practice it would be difficult to select a geographical location solely by applying the overall guiding criteria outlined earlier. For example, a state such as Rajasthan has significant need and opportunities in spite of a less than desirable policy environment. Hence, it is suggested that along with the overall criteria being met, an eye should be kept on emerging opportunities when deciding the final geographical location of interventions. An appropriate way forward for Sida would be to pursue a further dialogue with the proposed states. Suggestions for taking this process further are outlined in Section 9.

Sida has decided not to operate on the basis of focus states, the argument being that the scale of the support is not large enough to have state-level impacts. However, in the view of the team, intense support to certain states, and the accompanying dialogue with state-level institutions and other actors, may better serve Sida's interest in achieving policy and institutional impact. Geographical concentration will also facilitate programme management.

The table below gives a broad overview of the different states proposed.

Overview of statesrecommended for further consideration

Item	Chattisgarh	Karnataka	MP	Rajasthan	Tamil Nadu
Problem Area	Under-utilised potential	Over-exploitation	Over-exploitation, semi-arid area	Aridity, quality, over-exploitation	Over-exploitation, aridity
Water Sector Policy Focus	Developing and utilising potential	Manage developed resources	Developing and managing resources	State control emphasised,utilising potential	Manage developed sources, groundwater recharge
PRIs	MP approach being pursued	Early devolution, now regressive	Pioneering efforts in decentralisation	Evolving and gaining importance	Decentralisation initiatives moderate, only function transferred is water supply O & M
Adaptive cap. of sector institutions	Energy of new state	History of adapting to change	Appreciation of need for change	Limited appreciation of need for change	Adaptive to change, departments likely to keep control
NGOs	Limited no:s, good work on human rights	Cutting edge work	Large numbers, vibrant	Vibrant	Good NGO base
Poverty	High	Pockets	High	Pockets	Pockets
Donor Interventions	Low assistance, interest high	High	High	Moderate, interest low	Moderate,interest declining

6.7 Collaboration with Other Donors

Donor collaboration is an issue that all donors in principle agree to. It is viewed as an opportunity to share experiences, improve programmes and increase opportunities for impacting policy. In reality, effective donor collaboration is difficult to establish unless it has a basis in a joint programme.

In the drinking water sector opportunities exist for donor co-operation that may substantially increase the impact of Sida support. Sida's consideration to support UNICEF for a joint programme with DFID, rather than continuing with a separate funding programme, is a good example of how collaboration may strengthen interventions through joint preparations, monitoring and evaluation. Moreover, this will also enhance opportunities for learning and promote negotiations at policy level. For the same reasons, Sida may also consider extending support to the Water and Sanitation Programme – South Asia (WSP-SA) in collaboration with DFID.

In the area of water conservation and management there are no such evident opportunities for donor collaboration. Given that most bilateral donors look for a niche in projects of this nature, it may be difficult to identify areas of collaboration at this juncture. Further, designing and building up this programme will be an intensive task that may be constrained by donors with somewhat different agendas. In other than the water sector, a few bilateral donors have, or are considering, entering into joint programmes with the Asian Development Bank and the World Bank, with the objective to have a wider impact by supplementing physical interventions with capacity building. While a lot stands to be gained from such an approach if effective, there is a danger that the capacity development agenda may become marginalised by large-scale physical activities.

Another form of donor collaboration is a joint framework for funding of NGOs. An example is the Small Grant Facility for water activities co-ordinated by UNDP. However, at a glance it appears that

donor interest in this is more based on reducing the administrative burden involved with NGO funding rather than collaboration to learn and influence.

An additional way of creating meaningful donor collaboration could be to promote joint research collaboration around IWRM issues (see further Option 3).

6.8 Swedish-India Partnerships

Considerable opportunities exist for partnerships between India and Sweden in relation to a Sida supported aid programme within the water sector.

There are several institutes in Sweden with relevant experience of water and other natural resource management issues in India and other developing countries that could partner with institutes in India. These include, for example: Department of Water and Environmental Studies at Linkoping University, Swedish University of Agricultural Sciences, Centre of Environmental Economics and Social Science at Goteborg University, Royal Institute of Technology (KTH) and Stockholm Environment Institute. The experience of these institutes range from river basin assessment and water quality monitoring to community-based approaches to water resource management.

In the past, there has been collaboration between Swedish and Indian institutes in the water sector. For example, Stockholm Environment Institute has been working with developing the capacity of Indian NGOs in water supply and conservation, KTH has been involved in groundwater research in South India and Rajasthan with the Central Ground Water Board, and the University of Linkoping has been involved in research cooperation on limited water resources in South India. However, it appears that these partnerships have more or less operated in isolation from Sida's NRM programme in India. Given that Sida's involvement in the water sector has been limited to date it is understandable that stronger links were not envisaged or formed. However, with a strategic focus on water in the new NRM programme it will be important to draw on and further develop such partnerships.

There are many organisations in India with relevant experience of water issues that could partner with Swedish organisations – to name a few: Centre for Science and Environment, Centre of Environmental Education, Ahmedabad; Indian Institute of Science and their development institutions (SuTRA); Institute of Development Studies, Jaipur; Institute for Social and Economic Change, Bangalore; VIKSAT, Ahmedabad, and; Water Technology Centre, Coimbatore.

The rationale of partnerships between Indian and Swedish institutes is that they could be prime actors in generating knowledge, capacity and innovation in water issues relevant to the NRM programme. Such partnerships can be related to the sub-sectors of drinking water and water conservation, but can probably play a more dominant role in bringing IWRM further (see Option 3).

Stronger partnerships and links between Swedish and Indian institutions will also broaden the experience in Sweden of water and poverty issues in India. This will enhance the strength of the Swedish resource base to effectively contribute to the water sector and poverty reduction in India.

6.9 Financing Forms

As suggested earlier an active and intense dialogue would be required to outline and initiate programmes that can potentially impact policy and practice. The most suitable form of assistance is therefore grants linked to institutional development, capacity -building and physical activities that

cannot be financed by government funds.[18] Apart from the fact that physical activities alone have proven to be unsustainable, the team found little interest on the Indian side in Sida loans or credits in the water sector. This is partly due to the fact that the potential to generate revenue for repayment is questionable, and partly because such funds are generally available from the World Bank for states interested in embarking on loans. Moreover, several government-sponsored programmes include elements of natural resource management/ water activities.

On the whole, government representatives we met with showed a lot of responsiveness in finding mechanisms through which the bulk of physical activities in a potential Sida supported programme could be funded through other means than a Sida grant. On the basis of our discussions in the various states, there appears to be substantial scope for convergence with Indian government programmes for improving both water supply and conservation.

There exist a plethora of central government and state government development programmes channelled to the district and sub-district levels of administration through schemes that are aimed at provision of basic amenities and poverty alleviation through income generation, employment provision and asset-building. While these programmes have specific purposes, there are possibilities to utilise parts of these programmes for water- related activities without deviating from the purpose. In brief:

- 20 percent of ARWSP, the central drinking water supply scheme, can be utilised for components that include water conservation activities;
- 50 percent of EAS, the employment assurance programme, is to be utilised for watershed activities;
- SGSY (Swarnjayanti Gram Swarozgar Yojana), the Golden Jubilee Rural Self-employment Programme, can also be used for NRM-related activities, and;
- DPAP and DPP have water conservation as core components.

Currently, a significant portion of the EAS funds is utilised to create water harvesting structures with emphasis on local labour to fulfil the employment generation criterion.[19] The ARWSP has submission components that include funds for water conservation and recharge of aquifers, which could be used for water-based activities, subject to planning being done at the local level. In the case of ARWSP, the state governments have tended to use earmarked funds for other priority components like fluorosis and quality surveillance and not water conservation. However, despite the assurance from many government officials that these programmes can be utilised within a Sida funded programme, it needs to be cautioned that these schemes are loaded with guidelines regarding social targeting and allocation rules that can limit flexibility and innovation. Therefore, the concerned state government must be adaptive and willing to explore ways of utilising these funds in a flexible and meaningful way.

Devolution of some untied funds to PRIs has been initiated in most states. Untied funds are funds devolved to PRIs from central and state governments as per the State Finance Commission (SFC) recommendations. These funds are not earmarked for any specific programme or activity but are to

[18] Sida funds available for international training programmes could be utilised in conjunction with Sida funded NRM programmes so that this stream of funding can have a tangible impact. There are courses in Sweden on water management/IWRM that could be considered. Another form of assistance is research funds. Promotion of research could have a substantial impact on the sector programme (see Option 3 for details).

[19] Earlier this programme was largely used for building roads.

be utilised for fulfilling local priorities. Currently these funds are primarily utilised for paying electricity bills and building basic infrastructure (roads and drainage). While the untied fund offers the flexibility to address local priorities, this is hampered by a lack of structural change and limited funding available to address major local concerns. For example, in Karnataka, the framework for local planning specifies two conditions: (1) The budget will accommodate all ongoing work and committed activities, and (2) there is a restriction on hike beyond 10 percent of the last budget for any activity. Together, these restrict any scope for prioritisation of local schemes or for doing away with irrelevant schemes. Apart from the limited funding devolved by the SFC it is also the lapse in release that restricts PRIs from taking up and finishing a task meaningfully.

From the above it can be recognised that there are opportunities for utilising Indian funds. However, it would be pertinent to work with the state government for establishing support for necessary changes in the planning and administrative framework thus creating space for empowered initiatives that may have lasting impacts beyond Sida support.

7. Proposed Programme Options

The programme options identified are: (a) water conservation and management, (b) drinking water supply and sanitation, and (c) capacity-building for IWRM. The first two may appear conventional at one level, but can be innovative if linked to an IWRM agenda. Further, much more needs to be done to find ways in which communities can assess, negotiate and manage water resources. It is in working towards this that interventions will distinguish themselves from conventional ones. The 'entry' will however have to be through the conventional route, which is recognised and accepted. The scale needs to be 'local' enough to effectively engage with Gram Panchayats and other community institutions and keep institutional complexities to a manageable level. Awareness and capacity-building, both among primary and secondary stakeholders, will be most crucial. The policy and institutional challenges are significant and impacts on these will occur through successful demonstration models and dialogue in various forms and fora. Sida's commitment to supporting the decentralisation process and working with PRIs adds another dimension to the institutional challenge. However, it is here that Sida can gain the most significant value added, if interventions were to show that Gram Panchayats can indeed manage water resources in an effective and pro-poor manner.

7.1 Option 1: Water Conservation and Management

Rationale

Groundwater overexploitation and poor management of surface water resources have affected land-based livelihood and drinking water availability in several parts of the country, especially the arid, semi-arid and hard rock terrain areas. The impact of this has been felt most by the poor. A key reason accounting for this situation has been the limited planning and understanding of resource availability at the local level and the resultant unsustainable and iniquitous use patterns. It is widely acknowledged now that sustainable water use requires communities to analyse, negotiate and manage resources. Unfortunately, few sector interventions have laid emphasis on this; rather they have focused on resource utilisation and development.

In this context, emerges the need for interventions in water conservation and management. This has the ability to address livelihood and well-being concerns in several poor areas of the country. Moreover,

appropriately designed interventions in this direction can incrementally move beyond conventional 'watershed projects' to work on building resource literacy and enabling communities to assess, negotiate and manage water resources equitably and sustainably, thus approaching IWRM related objectives.

Local systems for managing water resources have existed in several parts of the country and offer potential for building on. However, these have been rendered ineffective by the dominant 'resource exploitation' mode of working. It needs to be noted though that their resurrection may not always address poverty-related issues, as the poor would often have been historically marginalised from community decision-making processes.

While 'water conservation and management' can have several connotations and interventions of various scales, it is useful to consider support only for interventions that can be implemented and managed locally. Large-scale interventions would be more complex institutionally, resource intensive and offering fewer opportunities to supporting the PRI decentralisation process. This also means that sub-basin management may not be feasible for Sida, at least not in the initial stages, though it offers opportunities for maximising hydrological impact. Nevertheless, it will be important to take cognisance of the macro-resource picture in a given geographical area and ensure that micro-level initiatives are consistent with the same. For Sida, local solutions, including water harvesting structures and restoration of existing water bodies such as ponds or tanks, may be more practical. They could demonstrate innovative approaches, have fewer institutional complexities and resource demands, besides offering opportunities to engage with PRIs and other related community institutions. Where appropriate and feasible, activities related to drinking water supply may gradually be added on to these interventions.

Objectives

The objectives of water conservation and management interventions could be to:

- Improve livelihoods through increased availability of water for productive and consumptive use.
- Enhance the access to and voice of the poor with regard to water resource use.
- Develop capacity of PRIs and other community institutions to plan for and manage water in a sustained, accountable and transparent way.
- Facilitate PRIs in demanding performance and accountability from relevant line departments.

Outputs

- Water harvested and managed in an equitable and sustainable way by PRIs and related community institutions using negotiated water management practices.
- Improved production due to increased availability of water.
- Mechanisms for equitable use and distribution of water established and followed.
- Mechanisms established in the Gram Panchayat to account for physical activities related to water.
- Line departments responsive to local needs for assistance in water resource management.

Geographical Location

This programme could be implemented in any of the states that were discussed as potential candidates under geographical location, i.e. Chattisgarh, Karnataka, Madhya Pradesh, Rajasthan and Tamil Nadu.

In Chattisgarh, however, there is an untapped potential for water resource utilisation and development through big rivers flowing through the state. This may impede responsiveness to a small and innovative conservation-based programme supported by Sida which places demands on administrative interest and flexibility. Moreover, there are few NGOs in Chattisgarh with relevant experience.

The World Bank-assisted Community-Based Tank Management Project and the DFID supported Karnataka Watershed Development Project (KAWAD) are being implemented in Karnataka. There is a possibility that a Sida intervention could, at state level, be muted by these large investments which also focus on local involvement in water management but not through PRIs. Otherwise, it may be possible to work with PRIs of the southern districts of Karnataka. In these areas, groundwater extraction is a major issue and PRIs have been active for a long period- well before the 73rd Constitutional Amendment. Existing links with Oxfam and the Indian Institute of Science in Bangalore could be strengthened to support this programme.

Western Madhya Pradesh faces overexploitation of groundwater. Its watershed programmes are generally viewed as better than average, which suggests the existence of a conducive framework for further work on water issues. The state government is currently taking up water awareness programmes, a theme that ties well with Sida's agenda. It is envisaged that DFID's Rural Livelihood Programme in the state will be implemented through PRIs. Depending on how the programme (currently under consideration) evolves, this can create a positive atmosphere for a Sida programme based on PRIs and water. However, the extensive geographical area covered by DFID (to be initiated in six districts and later extended to 17) may result in inadequate attention paid by the government to the needs of a substantially smaller Sida programme.

Rajasthan faces severe water shortages and excessive groundwater exploitation. There is a high need to increase water use efficiency. Per capita water resources are very low in most parts of the state. Innovative communication and capacity building activities are required to control water use. Efforts of Tharun Bharat Sangh are promising, but limited to creation of water assets through spontaneous institutions. These experiences can however be utilised and further built by introducing IWRM concepts, starting with participatory water audits and creation of water use regulating institutions. The World Bank will be supporting the Rajasthan Water Resources Restructuring Project. This will focus on the irrigated areas of Rajasthan and operate through Water Users Associations and thus may not overlap with Sida's interests. Another notable intervention in Rajasthan is PRISMO (Panchayati Raj Institutions' Support and Mobilisation) which is to be implemented through NGOs and supported by the Swiss Agency for Development and Cooperation (SDC). PRISMO is proposed in about 20 districts and can potentially promote sharing of experiences with Sida, as a bilateral donor operating on a similar scale as SDC.

Tamil Nadu is facing groundwater over-extraction in most of the districts. The Tamil Nadu Water and Drainage Board (TWAD) has taken some initiatives to assess water resources at block and micro watershed level and carried out research on groundwater recharge in collaboration with UNICEF. It hopes to extend this exercise throughout the state. This offers a unique experiment which can be built on and help local groups to understand water resources at village level and to take measures to conserve water. However, so far this experiment has remained a technical evaluation exercise. Taking the findings to PRIs and local stakeholder groups will be needed to start negotiations at village/ watershed level. PRIs in Tamil Nadu have not so far been actively involved in water conservation, but they have been given the task of O&M of local water supplies. Swedish relationships with WTC Coimbatore can also be built on.

Programmatic Framework

Working on water conservation and management offers an opportunity to work through both a bilateral and a NGO programme. NGOs can also have a role within a bilateral programme. In either case, the effort would be to demonstrate innovative approaches, which make substantive difference in the ground situation and influence policy at the state level by demonstrating results.

The district emerges as the evident overall boundary of a bilateral water conservation programme, being the unit for funding, departmental activities and PRIs. To increase the basis for learning Sida may consider taking up two districts (or part of districts) in two states. Subject to performance the activities could then be expanded in both or one of the states.

The NGO programme could possibly be structured on a thematic basis and may consist of initiatives in several locations. Working with NGOs provides opportunity to try innovative approaches, and create demonstrable models that can influence policy. A key advantage of a NGO programme operating in several locations would be the space made for learning and experimentation. However, this would require a rigorous dialogue along with documentation. Due to administrative burdens most donors tend to spend little time on the support that they extend to NGOs. However, this is a missed opportunity for broader learning and expansion of effective activities. Sida may consider contracting an external agency for this task.

Policy and Institutional Impact

The policy and institutional impact of this programme is expected to be slow. Given Sida's commitment to strengthening the decentralisation process, an important impact on policy and institutions could emerge from instances where PRIs and other community institutions demonstrate capacity to manage water resource locally. Sida may also be in a position to have an impact on decentralisation related to PRI planning and funding.

Added Value

There is considerable scope for value addition. Most interventions on water conservation have tended to neglect management and equity issues and bypass the PRI system. Sida would be among the first to accord an important role and space to PRIs in water resource management. However, real value added will emerge only if Sida interventions can demonstrate that PRIs and other community institutions can assess, negotiate and manage water resources locally. This is an area where little work has been undertaken and where there exists considerable scope to strengthening the decentralisation process.

7. 2 Option 2: Rural Drinking Water and Sanitation

Rationale

Access to drinking water remains a key local priority in many poor areas of India and has linkages to health and well-being, especially of the poor. Hand pumps are the dominant arrangements for rural water supply in India. Their operational performance is generally poor. In the past, this has been traced to poor O&M practices of relevant government agencies, typically the PHED. Another crucial issue, the ageing of hand pumps and the need for rehabilitation/ replacement, has escaped attention. Further, there are emerging instances of hand pump failure, declining water tables and quality due to depletion of groundwater resources. At one level, this can be ascribed to poor resource literacy and management of local resources. This demands significant local capacity build-

ing, an agenda that currently lies outside the canvass of major drinking water sector interventions. This strengthens the case for local management, especially since centralised management efforts have not yielded impressive results.

Sida support should facilitate Gram Panchayats and other user groups in assuming O&M responsibilities and addressing water availability arising from groundwater overexploitation and quality issues. The former will require building of local resource literacy, enabling participatory analysis and prioritisation and, in all probability, necessitate negotiating, developing and enforcing mechanisms for regulation of groundwater use. At a later stage, this could potentially provide a step towards examining and addressing the local water situation linked to conservation and management or even a wider IWRM perspective.

Worsening water quality is an issue especially in urban peripheries and semi-arid hard rock areas. Local people do not have mechanisms to monitor water quality and are entirely dependent on PHED water quality laboratories. There is a need for using simple tests to ensure water quality. There are several simple kits already available in the country, which can be used by village youth with some basic education. There have been a few efforts to take these technologies to the village-level, but they could not last beyond project periods. Capacity-building of local institutions and awareness of consequences of poor water quality is a necessary starting point for monitoring and remedial action. While technology options for remedial action are available, the earlier attempts to provide this through a top-down strategy have failed due to low awareness of cause and impacts, lack of local information on options inhibiting appropriate local choice that could be managed financially, and sub-criticality of services in rural areas (under-developed markets for support services – tools, filters etc). This is an area, which will require a partnership between the PHEDs and communities in selecting remedial options that suit local budgets and are amenable to the scale and skill levels for local market support.

Sanitation (both household and environmental) is another key area for intervention given the low coverage of service and the high health-burden of water-related diseases. However, it needs to be understood that the first priority for users is adequate drinking water and that demand instilled by higher awareness and strategies to influence hygiene behaviour would fructify only after the first priority is fulfilled (water-cleaning for toilets is the accepted norm in Indian culture and dry-toilets have failed earlier too). In the current context of scarcity, household sanitation will need to be part of the drinking water supply provision package, if sanitation objectives are to be focussed.

Given the high health burden from water-related diseases and the fact that rural drinking water forms an integral part of IWRM, Sida's continued support to this sub-sector is relevant.

Objectives

The objectives of drinking water interventions should be to:

- Increase access to safe drinking water, especially for the poorest.
- Improve management of hand pumps by PRIs and related community institutions.
- Establish village-level water quality monitoring and remedial action.
- Develop water management practices for sustainable water use.
- Increase awareness and spread of sanitation.

Outputs

The main outputs associated with drinking water and sanitation interventions would be:

- Improved availability of safe drinking water, especially for the poorest, through efficient resource management and quality improvement.
- Improved O&M by PRIs and related community institutions.
- Increased spread of sanitation.

Geographical Location

The location of Sida funded rural drinking water programmes is likely to be influenced by the modalities of Sida funding to UNICEF and whether Sida decides to collaborate with DFID on funding to an overall programme rather than specific areas. Nevertheless, some comments are provided below on features of different areas.

On a macro scale, Chattisgarh does not have the same drinking water problems caused by lack of water availability as many other areas. The Central Plains of Chattisgarh are, however, prone to drought and experience recurrent water problems. There are no externally funded drinking water programmes in operation.[20] An entry into Chattisgarh through drinking water may create opportunities for further support to the water sector, although, as mentioned earlier, the government may show more interest in resource utilisation than conservation.

There is a potential for taking up interventions in the drinking water sector with involvement of PRIs in Karnataka. The water problem is acute in the central region and the rain shadow regions of the northern districts and PRIs have been active for a long period. However, the World Bank funded Karnataka Rural Water Supply and Sanitation Project (KRWSSP) is being implemented in the northern districts and these districts may therefore be avoided. The involvement of PRIs in rural water supply and sanitation attempted in this project, has yet to become a state strategy and needs to be explored further as departmental interests will be impinged and resistance is possible. The central region can be focused on. This area has a history of vibrant Gram Panchayats and faces more acute water crises. Located near the tri-junction of Andhra Pradesh and Tamil Nadu, success in this region is likely to be closely observed by these states. NGOs are active throughout Karnataka.

Madhya Pradesh is another potential state with acute water scarcity in the western districts. External funding for drinking water is currently limited. In comparison with most states, Madhya Pradesh has made substantial progress in decentralisation. Considering the innovative features of the state, a drinking water project in this state may offer a good entry point for progressing towards IWRM.

Many areas of Rajasthan face severe drinking water scarcity and quality problems. Generally speaking the government is keen on solving problems of the arid areas through piped water systems, which would be unsustainable for Sida to support. As in Madhya Pradesh, the government handed over O&M of hand pumps to Gram Panchyats at one stage, only to take back the responsibility as poorly prepared Gram Panchayats were unable to discharge the same. Like in Madhya Pradesh, this poses questions about the sustained interest in decentralising rural drinking water.

Tamil Nadu is facing acute drinking water scarcity in most of the districts. The Tamil Nadu Water and Drainage Board (TWAD) is the dominant player in the water supply sector and is given the task

[20] Although we were informed by UNICEF in Madhya Pradesh that Sida has requested them to extend a programme to the state.

for formulating and commissioning of water supply schemes all over the state (rural and urban).[21] TWAD has shown a keen interest in sector reforms and have started involving PRIs in planning and implementation of water supplies. TWAD has good technical manpower and hopes to shift its focus to urban and small town water supplies after decentralisation and support capacities are in place. Enabling PRIs in becoming self-sufficient in rural water supply management will assist this shift. The TWAD has carried out some innovative efforts in water resource mapping and GIS for groundwater recharge under a UNICEF funded project to ensure sustainability of drinking water sources through an integrated water resource management approach. These technical innovations can be built on and adapted for utilisation by PRIs. Transferring this knowledge to PRIs would require collaborative efforts including capacity building of PRIs and improving their ability to understand technical information and to take measures to improve sustainability of drinking water sources. The whole effort of this exercise was to ensure source sustainability of drinking water supplies. However this can also be used as an starting input towards IWRM. The key issue is developing capacity of PRIs to understand water resources better and to develop preventive measures to regulate water use.

Programmatic Framework

Given Sida's long association with UNICEF, and the benefits of UNICEF's profile, extensive sectoral presence, and ability to carry a policy dialogue, there is little to be gained by Sida entering into a direct bilateral programme in the sector. Moreover, support to UNICEF reduces Sida's administrative burden. Support to WSP-SA, with whom Sida is associated in the urban sector, also offer similar opportunities, particularly on policy issues. The option of co-financing with DFID, another key donor to UNICEF and WSP-SA, exists. A co-financing arrangement with DFID can lead to better leverage for Sida within UNICEF, WSP-SA as well as the drinking water sector more broadly.

Policy and Institutional Impact

There exists potential for policy and institutional impact in the medium term, given the substantive efforts of donors and the current reform momentum. Working with UNICEF and WSP-SA offers definite advantages in this context. Given Sida's commitment to strengthening the decentralisation process, an important impact on policy and institutions could emerge from instances where PRIs and other community institutions demonstrate capacity to manage water resources and drinking water infrastructure locally. Ensuring, and subsequently demonstrating, that PRI and local communities can manage drinking water infrastructure and availability through adequate capacity building could have a relevant impact in the sector. In addition to the larger policy and institutional impact, immediate gains are likely in terms of capacity building in selected areas and lessons for scale-up of innovative approaches.

Added Value

At one level, there is limited value added in drinking water related interventions given the significant resources being committed by other donors and the government. However, the real value added will emerge if Sida interventions can demonstrate that PRIs and other community institutions can assesses, negotiate and manage water resources and drinking water infrastructure locally. This is an area where little work has been undertaken and where there exists considerable scope to strengthening the decentralisation process. Moreover, if drinking water initiatives can be steered towards IWRM, the value added will be high.

[21] Excluding Chennai metropolitan area.

7.3 Option 3: Building Capacity and Understanding for IWRM related Policies and Practices

Rationale

Although IWRM is increasingly believed to be the key to future water resource management, there are several institutional, technical and operational difficulties associated with implementing IWRM. As described earlier IWRM is in India still more of a (weakly understood) concept than an actual practice. Consequently, in the previous two options it has been suggested that Sida's approach at field level should start with sub-sectors which over time can progress towards IWRM.

Nevertheless, to enable Sida and its partners and stakeholders at various levels to work towards IWRM and effectively promote the concept, a process of generating knowledge and increased understanding is necessary. IWRM comprises a complex nexus of policies, departments, institutions and people. Awareness and capacity -building of IWRM will create a better environment for successful implementation. It is proposed that this can take place through research collaboration and an innovation fund.

A comprehensive research programme can offer extensive reflection and guidance for development of strategies by better understanding the institutional, social and poverty dimensions involved in IWRM. It can also serve as a platform for bringing people and institutions together and create further links and partnerships. The effectiveness of research collaboration will depend on institutional set ups and interest generated with various actors within and outside the Sida supported programmes. Sida has so far not promoted research activities in relation to its NRM programme in India. In some ways, this is a missed opportunity that could have created a better understanding about the underlying problems of natural resource management and thus more appropriate programme activities. When entering a new and more focussed programme around water, an applied research programme would create a useful debate around problems, policies and practices.[22]

In addition to research collaboration, Sida may consider establishing a small innovation fund that can be used for emergent opportunities for reinforcing the IWRM agenda. Examples of activities are small field-based interventions or capacity building aiming to improve water resource assessment at village/sub-basin level. Efforts to understand water resource changes have so far been limited to use of GIS, often not reaching the actual users. Other activities could be to develop materials and courses on water management at village level, support to policy-related advocacy and workshops at different levels, and training in Sweden on IWRM (this could be funded though Sida's international training programmes).

Objectives

It is proposed that the objectives of this programme should be to:

- Enhance the understanding of the IWRM concept amongst various actors and support the development of strategies and policies for putting the concept into practice.
- Increase the understanding of opportunities arising from the decentralisation process for IWRM.
- Increase the understanding of the link between poverty and water and how IWRM can be used to tackle poverty reduction.
- Facilitate innovation on IWRM at various levels.

[22] An example of an applied research programme related to multiple aspects of water in India is the DFID supported 'Water, households, and rural livelihoods' (WHIRL). This is a joint Indian, UK and South African research project aiming to promote access of the poor to sustainable water supplies for domestic and productive uses in areas of water scarcity.

Outputs

- Better understanding of IWRM at policy and operational level.
- Enhanced understanding of the link between poverty and water resources management.
- Enhanced capacity within Sida supported programmes as well as other actors to promote IWRM.

Geographical Focus

There are advantages in focussing activities under this programme to areas where Sida will be supporting drinking water and water conservation programmes to enable links to be made and learning shared. However, establishing a strict geographical focus to this programme would not be appropriate as this would limit understanding that could be gained from IWRM-related practices generated in various parts of India. Hence, the geographical location should be based on opportunities that emerge, with some focus on areas where interventions are proposed under the other two programme options.

Programmatic Framework

It is envisaged that this programme will be implemented by capable organisations that are interested to play a role in IWRM in India. A substantial part of this can be implemented through research collaboration between Indian and Swedish institutes.[23] Institutions that have substantial experiences of IWRM, such as the International Water Management Institute (IWMI), could be made a partner of this programme. Other donors interested in IWRM could be invited to support subareas of this programme.

In view of the administrative burden involved with a programme of this nature and the low staff strength of Sida, it may be suitable to contract an India -Swedish partnership for managing this intervention. However, if this programme is to be relevant for Sida's sector strategy, Sida will need to take an active interest in and work closely with developing and monitoring activities.

Policy and Institutional Impact

The policy and institutional impact of this option will be slow, but properly designed and managed it would be an opportunity to involve policy-makers and important actors in an active dialogue around IWRM related issues. This programme will enable IWRM to be highlighted beyond project level and can therefore have a wider albeit long-term impact. This programme could also enable donor interaction around issues rather than projects, which has the potential for spin off effects in areas of joint strategic interest.

Added Value

Coupled with Sida's broader involvement in the water sector through programmes on water conservation and drinking water supply, the outlined programme could add substantial value by bringing IWRM and poverty-related issues forward through innovation and documentation. Properly managed, this programme can also raise Sida's profile as an important actor in the water sector in India although the funding would be of small scale.

[23] Sida has established comprehensive research programmes in other parts of the world, for example, the South African Swedish Research Partnership Programme and Swedish Research Links for the MENA region. Ideas can be drawn from these.

8. Risks and Killing factors

Understanding and assessing risks is an integral part to good programme and project design. Failure to realistically identify and address risks, or more harshly put, killing factors, is a common source of programme failure. The following refers to broad and generic risks of all programme options:

- Lack of commitment to the 73rd amendment amongst bureaucrats and politicians; functions, functionaries and funds do not get transferred.
- Low capacity of PRIs as management institutions.
- Caste, class, gender and other politics govern Gram Panchayats. Evidence shows that poor people have limited influence over decisions made in the Gram Panchayat. Adequate attention is not paid to building measures for equity at local level.
- Lack of capacity, patience or interest with implementing organisations to engage with the link between poverty and water to create pro-poor solutions.
- Limited staff strength of Sida to manage and steer programmes in desired directions.
- Limited capacity of consultants to support effective programme design.

The importance and likelihood of these risks to occur need to be analysed further. Strategies and responses to overcome these must be outlined at an early stage. While the above is only a generic list, a detailed risk analysis will be necessary in the design stages of the programme to ensure that associated risks are adequately understood and mitigating measures built around them.

9. Suggestions for Taking the Process Forward

The process of building a new Sida programme in the water and sector in India will be challenging and fraught with a range of risks. A structured and cautious approach towards project development would be necessary to ensure both an acceptable level of success and learning from a number of 'failures' that will take place given the complex nature of the tasks in hand.

Building a portfolio of potential projects across the strategic options provided above would be an important risk mitigation measure during the early stage of programme development. The dropout rate of potential projects can be moderate to high during the design, appraisal and approval stages, which would have to be factored into the overall portfolio choice.

In addition, constructing a structured process of engagement with government, NGO or independent partners will be an important means of building sectoral experience, trust and a functional process of ongoing project development, management, monitoring and appraisal. Donor competition and the 'over-supply' of both GoI and donor funds to particular sectors and states is an operational reality that needs to be factored into this engagement. Given the strong pro-poor and well-being focus of the proposed programme, it would be important for potential partners to demonstrate sufficient interest, commitment and political will to facilitate the convergence of their targets and processes with Sida goals. This would require a staged process of critical analysis, engagement and dialogue that could go a long way to establish a stable and sustainable programme in the water sector.

This could take the form of a five-stage process, following the finalisation of the country and preferred sector strategies and portfolio options:

- Identification of a potential 'shelf' of opportunities with selected partners in focal areas.
- Detailed situation analysis of states, partners, regions and opportunities that provide an overview of key issues (e.g. community and poverty analysis; resource base, technology and management options analysis; institutional analysis especially of partner institutions, PRIs and village institutions; implementation options and constraints; risk analysis and potential mitigation measures).
- Internal short-listing of potential opportunities based on the situation analysis and initiating partner dialogue in short-listed areas.
- Presentation of detailed proposals by partners in short-listed areas, in response to broad guidelines and a review of the situation analysis, and agreement on the way forward on specific project opportunities.
- Development and appraisal of project opportunities, based on detailed on the ground fieldwork and analysis.

Annex 1: Terms of Reference

A study of the linkages between poverty and natural resources management in India, with specific focus on water resource management – Issues and framework for future cooperation between Sweden and India.

1. Background

The Swedish Government has requested Sida to prepare a new country strategy for the development cooperation with India, to be finalised during the year 2002 and valid from 2003.

In the past, Sida has made substantial contributions to the forestry, water, and land husbandry sectors in India. Most of the projects/programmes focused on investments towards asset creation with lesser emphasis on institutional and policy issues. It is now being recognised that massive investments alone may not bring about development. A concomitant legal and policy framework and appropriate institutional mechanisms are prerequisites for the investments to be sustainable. There have been a number of changes in the 90's in the policy and institutional framework governing the natural resource management in the country. Given this background and learnings from Sida's involvement in the sector, a study shall be undertaken with the aim of analysing linkages between poverty and natural resources with specific focus on water. The study shall also propose a strategy for future Swedish support to the NRM sector.

2. Objectives

The overall objective of the study is to make a contribution to Sida's ongoing preparation of a country strategy for India. The study shall therefore have the following outputs:

- Detailed objectives of the future cooperation;
- Strategies, approaches and methods of cooperation;
- Strategic areas of future cooperation and level of ambition for Sida;
- Institutional and financial modes/mechanisms of cooperation.

The suggestions provided by the consultant shall be based on a critical analysis of the developments in the sector and upon an evaluation of previous and existing interventions in the sector, including a synthesis of the lessons learnt.

3. Scope of work

The consultant shall make an overall analysis of the linkages between poverty and natural resource management with specific focus on water. Sida's experience in the forestry sector in Orissa and the potential for the sector to support livelihoods and income generation to local communities shall be explored. The following broad areas will be studied in detail:

- Developing/promoting innovative approaches to integrated water resources management;
- Strengthening of the panchayati raj system with the objective of institutionalising fiscal, administrative and legislative reforms and with relevance to natural resource management;

Under these broad thematic areas, the paper shall provide an overview, identify strategic issues, and outline programme options which later can be developed further.

Future programmes

The study shall discuss and propose specific objectives, target group(s) expected inputs and outputs and corresponding activities for a programme and/or for a set of programmes.

Partners, Target groups, Channels, and institutional framework

The existing Sida partners include the UNICEF (water and sanitation) and NGOs working in the water and forestry sectors. The consultant shall analyse the potential for linkages between different implementing partners – multilateral agencies, bilateral donors, state governments, district panchayats, NGOs and research institutions.

Focus

The consultants shall suggest likely geographical locations in an order of priority for future interventions. Potential for impacting policy change, poverty, community response should be the criteria.

Sectoral areas

The consultants shall look into the water sector within specified sub areas, which have, potential for high level of community involvement and a direct and tangible impact on poverty.

Methodology, instruments, and financing forms

The study shall analyse and discuss how the utilisation of Swedish funds can have a maximum impact on poverty. Experience has shown that activities like capacity building, training and institutional development are more successful if combined with investments. Therefore the paper shall examine various avenues/opportunities of establishing linkages between these activities and direct investments by various stakeholders in the sector (with or without Swedish funding)

Furthermore, possible instruments (i.e., local funds/micro credits, economic cooperation, international training programmes etc) and partners and channels should be indicated and discussed.

Swedish funds are not to be used for ordinary investment projects, which normally would be financed by India, The Swedish funds are justified because they represent an added value. The paper shall discuss the possibilities to use Swedish funds to facilitate access to local public funds.

The Cooperation programme is expected to include both reactive and pro active forms of assistance. Examples of reactive methodology are funds to the financing of certain type of projects e.g. cooperation projects between Indian and Swedish partners.

In the pro-active form of cooperation, Sida is more actively involved in dialogue with the local partner in the planning phase. Project objectives and implementation plans are mutually agreed as well as the forms for reporting and monitoring. An example would be a combined investment and capacity building project, which requires progress in institutional reforms.

The consultant shall consider possible financing models.

Cooperation with other donors

In order to increase the impact of the Swedish assistance and reduce the administrative burden of Sida co-financing with other donors could be considered. The Consultant shall not enter into discussion on such cooperation but collect information on potentially relevant programmes by other donors.

Ownership, agents of change, risks, and bottlenecks

The consultant shall identify 'agents of change' and areas where a movement in the 'right direction' already exists or is developing. The consultant shall identify such positive environments, analyse risks and bottlenecks and identify possible 'killing factors'.

Value added

Sida's assistance will be insignificant compared to both the needs of India and the total flow of ODA to India. Strategies to optimise the impact of the Swedish contribution are therefore required. Such strategies could include support and reinforcement of existing local initiatives, partnership with 'agents of change', mobilisation of local resources, multiplication effects leverage through donor cooperation etc. The consultant shall analyse all proposals from the perspective of 'value added'.

Swedish Indian Partnership

The future Swedish support in the water and forestry sectors in India should promote scientific and technical collaborations/partnerships, which could sustain also without Sida funding. The consultant shall broadly identify such areas where such partnerships could be promoted.

Administrative requirements

The consultant should consider pro active/re active forms of assistance, size, and time span of projects, possibilities to bundle smaller projects, project management models, and other measures in order to reduce the administrative burden of Sida.

4. Expected output

The expected output is a document entitled 'Analysis of the linkages between poverty and natural resource management in India with specific focus on water – issues and framework for future cooperation between Sweden and India'

5. Methodology

The assignment entails work in Sweden and India. The consultant shall meet with the Embassy of Sweden for briefing before the start of the mission and upon completion of the mission in India. A final de-briefing shall be also be done at Sida, Stockholm.

The consultant shall use a combination of desk study, filed visits and meetings with all the relevant stakeholders in India and elsewhere.

6. Requirement for the assignment and manning

The consultant should have extensive experience in the field of community based natural resources management in India and specific knowledge of past development cooperation between Sweden and India in the field of natural resource management.

7. Time schedule

The assignment shall be carried out between mid April to end May 2002. A draft outline of the proposed conclusions and recommendations shall be presented at the Embassy on 10 May 2002. The draft final report should be presented by 31 May 2002 and the final report by 30 June 2002.

Annex 2: List of Persons Met

DELHI (Donors and Govt.)

Mr. G.V. Abhyankar
Senior Sanitary Engineer
The World Bank
70, Lodi Estate, New Delhi
Phone: +91-011-4617241 Extn: 167
Fax: +91-011-461 9393, 462 8074
gabhyankar@worldbank.org

Ms. Kulan Amin
Resident Consultant (Development)
European Union
65 Golf Links
New Delhi 110003
Phone: +91-11-4629237
kulan.amin@delind.cec.eu.int

Mr. S.K. Arora
Programme Officer
Environment & GEF Section
UNDP
55 Lodi Estate
New Delhi 110003
Phone: +91-11-4628877
Sunil.arora@undp.org

Mr. Berneard Boudreau
Project Director
ICEF
86, Paschmi Marg
Vasant Vihar
New Delhi – 110 057
Phone: +91-11-614 4051, 614 6074, 614 6653
Fax: +91-11-614 7827, 614 6236, 614 6078
e-mail: Bernard@delhi.icco.net

Ms. Sara Camblin Breault
First Secretary
Environment & Natural Resources
Canadian High Commission
7/8 Shantipath, Chanakyapuri
New Delhi – 110 021
Phone: +91-11-687 6500
Fax: +91-11-688 6478
e-mail: sara.cambin-breault@dfait-maeci.gc.ca

Mr. Kevin Crockford
Rural Livelihoods Adviser
DFID India, British High Commission,
B 28, Tara Crescent,
Qutub Institutional Area, New Delhi
Phone: +91-011-6529123 Ext: 3421
Fax: +91-011-6529296
k-crockford@dfid.gov.uk

Mr. Guy Honore
German Project Co-ordinator
Indo-German Bilateral Project Watershed Management
B-4/1, Vasant Vihar
New Delhi 110057
Phone: +91-11-6141539
Info@watershedindia.org

Mr. Vijay Kumar
Senior Programme Officer
Danida
Water Sector
11, Aurangzeb Road, New Delhi
Phone: +91-011-301 0900
Fax; +91-011-3792019, 379 2891
denmark@vsnl.com

Ms. Lucy Maarse
Head Natural Resource Management
Swiss Agency for Development
and Cooperation
Embassy of Switzerland
Changragupta Marg, Chanakyapuri
New Delhi – 110 021
Phone: +91-11-687 7819-20
Fax: +91-11-687 3631
e-mail: lucy.maarse@sdc.net

Mr. Henk van Norden
Chief
Child's Environment Section,
UNICEF India Country Office
UNICEF House, 73 Lodi Estate
New Delhi
Phone:+91- 011-4690401, 4691401
Fax: +91-011-4627521
hvnorden@unicef.org

Mr. Raghavendra Rao
Rural Livelihoods Adviser
DFID India, British High Commission
B 28, Tara Crescent
Qutub Institutional Area, New Delhi
Phone: +91-011-6529123 Extn: 3421
Fax: +91-011-6529296
R-Rao@dfid.gov.uk

DR. Pradeep K. Sharma
Division Chief Economist
Public Policy Division
UNDP
55 Lodi Estate
New Delhi 110003
Phone: +91-11-4628877
Pradeep.sharma@undp.org

Mr. Vivek Srivastava
Country Team Leader (India)
Water and Sanitation Program, South Asia
55, Lodi Estate, P.O. Box. 416,
New Delhi
Phone: +91-011-4690488,469 0489
Fax: +91-011-462 8250
vsrivastava@worldbank.org

Ms. Sarojini Ganju Thakur
Rural Livelihoods Adviser
DFID India, British High Commission
B 28, Tara Crescent,
Qutub Institutional Area, New Delhi
Phone: +91-011-6529123 Extn: 3421
Fax: +91-011-6529296

Mr. Ernst Tideman
Watershed Management Adviser
Indo-German Bilateral Project Watershed
Management
B-4/1, Vasant Vihar
New Delhi 110057
Phone: +91-11-6141539
Info@watershedindia.org

Mr. Chandran Thiruchittampalam
Counsellor (Development)
Canadian High Commission
7/8 Shantipath, Chanakayapuri
New Delhi – 110 021
Phone: +91-11-687 6500
Fax: +91-11-688 6478
e-mail: chandran.thiru@dfait-maeci.gc.ca

Mr. Avinash C. Tyagi
Commissioner (Poicy & Planning)
Misntry of Water Resources
Govt. of India
Room No. 404, Shram Shakti Bhawan
New Delhi – 110 001
Phone: +91-11-371 1946
e-mail: actyagi@hotmail.com

Mr. Paul ter Weel
First Secretary
Rural Development and Environment
Royal Netherlands Embassy
6/50-F, Shantipath, Chanakyapuri
New Delhi – 110 021
Phone: +91-11-688 4951 extn 262
Fax: +91-11-410 3089
e-mail:paul-ter.weel@minbusa.nl

CHATTISGARH

Mr. Lalit Surjan
Editor
Daily Deshbandhu
Raipur – 492 001
Phone: +91-0771-539 911/22/33/44
Fax: +91-0771-534 955
e-mail: lalitsurjan@dailydeshbandhu.com

Smt. Indira Mishra
Principal Secretary
General Administration
Govt. of Chattisgarh
Room No. 259,
DKS Bhawan, Mantralaya
Raipur
Phone: +91-0771-221 2591

Mr. Shailesh Pathak IAS
Director, Institutional Finance
Govt. of Chattisgarh
Mantralaya, Raipur – 492 001
Phone: +91-0771-221 272
Fax: +91-0771-221 271
e-mail: spathak@cg.nic.in

Mr. M.K.Raut
Secretary
Watershed Development
Govt. of Chattisgarh
Room No. 266, DKS Bhawan
Mantralaya, Raipur
Phone: +91-0771-234 110

Dr. Sushil Trivedi
Secretary
Public Health Engineering & Water Resource Department
Room No. 149, Secretariat
DKS Bhawan
Raipur – 492 001
Phone: +91-0771-221 149, 680 949
Fax: +91-0771-221 151

KARNATAKA

Mr. Channabasappa, IAS
Secretary -Water Resources
M.S. Building, Dr. Br.R. Ambedkar Rd,
Bangalore
Phone: +91-080-225 5524

Mr. R.G. Nadadur
Commissioner, Watershed Development
Phone: +91-080-346 6501

Mr. G. Sriramappa
Director, Oxfam India,
"Vijaya Shree",
4th A Main, Near Baptist Hospital,
(Off. Bellary Road), Hebbal, Bangalore
Phone: +91-080-363 2964, 363 3274
e-mail: oxfamindia@vsnl.com

Mr. K. R. Ramakrishna, KAS
Director (P & I), Jala Samvardhane Yojane Sangha
16/1, 5th Floor, S.P. Complex, Lalbagh Road,
Bangalore
Phone: +91-080-299 5623
e-mail: katteri@yahoo.com

Mr. Shivanna, IFS
Chief Conservator of Forests, Specialist (Environment), Jala Samvardhane Yojane Sangha
16/1, 5th Floor, S.P. Complex, Lalbagh Road,
Bangalore
Phone: +91-080-212 0908, 299 5622
e-mail: Shivanna47@yahoo.com

Mr. Raj Kamal, I.A.S.
Director, Project Planning & Monitoring Unit & E.O.
Jt. Secy. To Govt., Rural Development & Panchayat Raj Department.
6th Floor, 'F' Block, Cauvery Bhavan,
Bangalore
Phone: +91-080-224 0508
e-mail: dirppmu@vsnl.in

Mr. T.R. Raghunandan, IAS
Secretary to Government, Rural Development and Panchayati Raj Department
3rd Floor, 2nd Stage, M.S. Building, Dr. Ambedkar Veedhi, Bangalore
Phone: +91-080-238 4574
e-mail: trraghu@yahoo.com

MADHYA PRADESH

Mr. R.Gopalakrishnan
Secretary to Chief Minister
Mission Coordinator
Rajiv Gandhi Missions
Bhopal
Phone: +91-0755-551 386
Fax: +91-0755-556 634
e-mail: gopal@nic.in, gopalkr@sancharnet.in

Shri L.K.Joshi
Principal Secretary
Public Relations and Water Resources Development
Govt. of Madhya Pradesh
Vallabh Bhawan
Bhopal
Phone: +91-0755-552 770, 556 831
Fax: +91-0755-550 358
e-mail: lkjoshi@bom6.vsnl.net.in, joshilatik@yahoo.com

Mr. Satyanand Mishra
Principal Secretary
Public Health Engineering
Govt. of Madhya Pradesh
Vallabh Bhawan, Bhopal
Phone: +91-0755-550 310
Fax: +91-0755-571 948
Res: +91-0755-552 849

Mr. Sudhir Nath
Principal Secretary
Rural Developemnt and Panchayati Raj
Govt. of Madhya Pradesh
No. 95, Vallabh Bhawan
Bhawan, Bhopal
Phone: +91-0755-551 531
Fax: +91-0755-552 357

Mr. Dauda Wurie
UNICEF
E-7/653, Arera Colony
Shahpura, Bhopal
Phone: +91-0755-466 568, 461410

Ms. Richa Vyas
DFID
E-7/642, Arera Colony, Bhopal
Pjone: +91-0755-295 541, 294 452
Fax: +91-0755-294 453

Mr. Prabhat Jha
SAMARTHAN
E-7/81, Bankers Colony
Arera Colony
Bhopal
Phone: +91-0755-467 625, 293 147
Fax: +91-0755-468 663

Mr. Amitabh Singh
DEBATE
Phone: +91-0755-294 784, 276 332, 467 726

RAJASTHAN

Dr. Satish Kumar
Chief
Field Office Rajasthan
UNICEF
B-9, Bhawani Singh Lane
Opp. Nehru Sahkar Bhawan
C-Scheme, Jaipur – 302 001
Phone: +91-0141-382 694, 383 154, 383 165
Fax: +91-0141-382 910
e-mail: sakumar@unicef.org

Mr. M.S. Rathore
Senior Fellow
Institute of Development Studies
8-B, Jhalana Institutional Area
Jaipur – 302 004
Phone: +91-0141-515 726, 517 457
Res: +91-0141-358 028
Fax: +91-0141-515 348
e-mail: msr@idsj.org

Mr. O.P. Bihari
Additional Chief Secretary
Rural Development and Panchayati Raj
Govt. of Rajasthan
Phone: +91-0141-383 061

Mr. Anil Vaish
Principal Secretary
Irrigation
Govt. of Rajasthan
Phone: +91-0141-380 335

Mr. R.N. Meena
Secretary
Public Health/Water Supply and Water shed
Govt. of Rajasthan
Phone: +91-0141-383 380
Fax: +91-0141-380 533

Mr. Sachin Sachdeva
ARAVALI
Patel Bhawan, H.C.M.-Repa
Jawahar Lal Nehru Marg, Jaipur
Phone: +91-0141-701 941, 405 498
Fax: +91-0141-513 556
e-mail: aravali@raj.nic.in, aravali@id.eth.net

Mr. Jaipal Singh
ARAVALI
Patel Bhawan, H.C.M.-Repa
Jawahar Lal Nehru Marg
Jaipur
Phone: +91-0141-701 941, 405 498
Fax: +91-0141-513 556
e-mail: aravali@raj.nic.in, aravali@id.eth.net

TAMIL NADU

Prof. S. Chelliah,
Project Director, India-Canada Environment Facility,
M.S. Swaminathan Research Foundation
Third Cross Street,
Taramani Institutional Area, Taramani,
Chennai
Phone: +91-044- 254 2698, 254 2699
e-mail: schelliah@mssrf.res.in, chelliahs@hotmail.com

K. Deenabandu, I.A.S.
Managing Director, Tamil Nadu Water Supply and Drainage Board
31, Kamarajar Salai, Chepauk, Chennai
Phone: +91-044- 852 5501
e-mail: twadmd@md3.vsnl.net.in

M. Devarajan
Dy. Hydrogeologist, TWAD Board
Chepauk, Chennai
Phone: +91-044- 8530420 Extn: 413

Mr. M. Kutralingam, IAS
Secretary to Government, Irrigation and Water Resources
Secretariat, 5th Floor, New Building, Fort St. George, Chennai
Phone: +91-044-536 1622

Mr. L.N. Vijayaraghavan, IAS
Secretary to Government, Rural Development and Panchayat Raj Department
Secretariat, 8th Floor, New building, near VIP Lift, Fort St. George, Chennai
Phone: +91-040-536 0769

UTTRANCHAL

Mr. K.L.Arya IFS.
Project Director (Administration)
Watershed Management Directorate
Dehradun, Uttaranchal
Phone: +91-0135-760 170
Fax: +91-0135-768 712
Res: +91-0135-760 843
e-mail: dir@wmdua.org

Mr. Keshav Desiraju
Secretary
Power and Irrigation
Govt. of Uttaranchal
Secretariat
4, Subhash Road
Dehradun – 248 001
Phone: +91-0135-712 066, 711 224
Fax: +91-0135-712 050
Res: +91-0135-712 074

Ms. Cyril R.Raphel
Executive Director
Research Advocacy and Communication in Himalayan Areas (RACHNA)
12/26, Ashirawad Enclave
Derhradun – 248 001
Phone: +91-0135-761 216
Fax: +91-0135-763 216
E-mail: rachnaadd@vsnl.com

Mr. R.S.Tolia
Principal Secretary
Rural Development and Panchayati Raj
Govt. of Uttaranchal
Secretariat
4, Subhash Road
Dehradun, Uttaranchal
Phone: +91-0135-712 070, 712 001

Mr. Ravi Chopra, Salil Das, Debashish Sen, Ramesh Pahari
People Science Center
Dehradun
Phone: +91-0135-773 849

Annex 3: Donor Approaches in the Forest Sector

World Bank

The World Bank has invested US$830.14 million in India in 16 projects. Since 1992, the Bank has financed six state-level sector wide projects that support the forest sector development strategies of individual state Forest Departments. The Bank's involvement in JFM in India is the largest experiment in participatory forest management ever funded by the Bank anywhere in the developing world.

The JFM strategy used in these projects involves villagers cooperating with the Forest Departments (FDs) in forest protection in exchange for a share of the final harvest and so-called "usufruct" rights — the right to utilise the forests so long as they are not damaged or altered. A two-pronged approach is followed to involve communities: increasing the stake of the neighbouring communities in the management and utilisation of the forests, and creating alternative sources of employment to reduce the pressure on forests. These include work on tree planting and regenerating activities, as well as the building of sources of drinking water supply, approach roads, schools, check dams, and other facilities.

The Bank feels that it has contributed by bridging the budgetary gap which has enabled India to implement its forest strategy. By following a systemic approach toward building the capacity for production and management of good quality planting material, it is helping build in-country capacity for production technology generation and transfer. By helping to change the attitude of the FD toward working with the poor in tree/forest protection and regeneration, the Bank is building consensus for a new strategy of forest protection and management. By playing a catalytic role in bringing several policy and institutional issues to the table, the Bank has been helping focus attention on areas in need of reform.

The Bank recognises that the policy, legal, and institutional environment is not yet right in the forest sector in India. Even so, it has continued lending to the sector, clearly recognising that it can be effective in a country of India's size and complexity only by remaining engaged and taking an incremental approach to achieving desired results. The Bank has tried to deal with policy, legal, and institutional issues in the context of individual projects, but its project-by-project approach has not enabled it to build an overarching Bank strategy toward the Indian forest sector.

Department for International Development (DFID)

DFID has earlier supported the Western Ghats Forestry Project in Karnataka, and is currently supporting the Forest Sector Reforms Project in Himachal Pradesh. The duration of the project is four years with a total budget of around 8.2 million pound sterling. The project would be implemented in four circles, and around 90 villages/sites.

The primary goal of DFID supported projects is to alleviate poverty and help people achieve sustainable livelihoods. Forestry is seen as an important element in the link between poverty and eroding natural capital and the focus on forestry is as a result of synergy between sustainable forest management and poverty alleviation. DFID's current strategy is to adopt a livelihoods approach which acknowledges existence of a complex web of support for most rural households. Within this the forest is just one of many important natural resources, and constitute part of a wide portfolio of income sources. The approach places great focus on identification of interest groups and understanding of the social and institutional context.

Under the Himachal Pradesh Forest Sector Reforms Project, the support is for the purpose of establishing an "integrated and cost effective strategy for forest management and enhanced livelihoods of the poorest forest-dependent women and men". The focus is on developing multi-stakeholder forest sector policy and strategy; strengthening government and non-government institutions to provide integrated livelihood support mechanisms; and developing models for empowering and supporting the poorest forest dependent people to strengthen their livelihoods.

The European Union (EU)

The EU is currently supporting the Haryana Community Forestry Project. The project duration is ten years, and proposes to cover 300 villages in Haryana with a total budget of 30.1 million Euro. The overall objective of the project is to build the capacity of rural communities to improve the natural environment and maintain land fertility through sustainable management of natural resources undertaken in a participatory manner. The expected results are increased wood production, improved productivity of common and private lands and greater involvement of project stakeholders, including women, in planning and management of common property resources.

The project intends to help the villagers to establish 'Village Resource Management Committees' (VRMC), which would be registered either as sub-committee of the local Panchayat or as a Society. The project has pre-defined activities for different areas which include block plantation on Panchayat and private land. The FD staff are expected to help the villagers through the VRMC to develop a 'micro-plan' for development and management of their natural resources, and addressing their community level problems. While the plans related to forestry are financially and technically supported by the project, plans related to other areas are expected to be supported by other relevant government departments or the local Panchayat.

Annex 4: Approaches of Different Donors in the Water Sector

Australian Development Agency for Cooperation (AusAID)

Australia provides grants in the form of technical assistance and limited equipment supply as necessary for the implementation of development cooperation projects. The priority sectors for Australian assistance (from 2001) are water supply, health and education in the states of Himachal Pradesh, Sikkim and the Northeast. AusAID has committed an estimated total aid flow of about Rs. 530 million for the financial year 2001–02. This includes about Rs. 377 million under the bilateral programme to India. The remaining support is for NGO programmes in the areas of poverty alleviation, women development etc. implemented through Australian NGOs. Some support for education is provided through UNICEF.

The bilateral aid is expected to focus on assistance to institutional reforms and restructuring of partner agencies through training and management, assistance to government in improved fiscal management; focus on improving the situation of the poor and reducing poverty through focused interventions that pilot inclusive approaches in health, education and water supply complementing institutional and management reforms. The NGO programme will focus on poverty reduction through livelihood improvement interventions in the NRM sector and networking, supplies and advocacy practice in the control of HIV/AIDS.

Canadian International Development Agency (CIDA)

Environmental management is one of CIDA's core sectors in India. It is in this context that support is currently being considered for water resource management (based on, for example, water harvesting and run off management). The drinking water sector is not likely to benefit from CIDA given the view that there already exists extensive donor support beyond the absorptive capacity of sector institutions. CIDA has recently chosen Chattisgarh, Jharkhand, MP, Uttaranchal and UP as its focus states. This is expected to facilitate dialogue between programmes and networking at the state level. Given its demand-driven approach and with a view to ensuring sustainability, CIDA will support interventions that are integral to the broader plans of the focus states.

Danish Agency for Development Assistance (Danida)

Danida has been working with rural drinking water supply in India for the last two decades. The other main area in the water sector has been watershed development where the emphasis has been on low cost interventions and people's participation in design, operations and maintenance. The programmes are located in Karnataka, MP, Orissa and Tamil Nadu. Danida perceives that they have had an impact on the government in both sub-sectors by demonstrating new models and practices. The organisation is now in a phase of trying to make on-going projects sustainable. Danida is expected to phase out its development cooperation programme with India by 2008.

Department for International Development India (DFIDI)

DFIDI has four focus states; AP, MP, Orissa and West Bengal. Support to the water sector is mainly to UNICEF for drinking water and sanitation. It is held that UNICEF's long-standing relationship with the government places them in a better position than DFID to influence policy and promote sector reform in drinking water supply and sanitation. A shift towards IWRM is considered desir-

able by DFID in the water sector, but viable opportunities have been difficult to come by. Some links are however being built through rural livelihood interventions. DFIDI's Sustainable Rural Livelihood Projects aim to expand support to the rural development sector in the four focus states. These projects use the sustainable livelihoods model to understand poverty and develop interventions. Watershed development is seen to be a possible entry point, but other activities that could contribute to improved livelihoods are also supported.

European Union (EU)

The European Union is in a process of restructuring its development collaboration with India. The work carried out to date in the water sector includes irrigation, water use efficiency, tank rehabilitation, and watershed management. In the future it is envisaged that the emphasis will be on programmes that have clearer policy links and implications. Poverty will be an important criterion for selecting locations. There has been no specific state focus so far.

India Canada Environmental Facility (ICEF)

The primary focus of ICEF is to develop natural resources and improve environmental managerial capacity within government, NGOs, community organisations and the private sector as the basis for addressing specific natural resource and environment-related problems in the water and energy sectors in India. Projects are funded on the basis of their potential to contribute to sustainable solutions to water and energy resource management issues. Several ICEF project ideas have been adopted and scaled up by bilateral donors. Operating as a registered society, ICEF has an eight-member Joint Project Steering Committee with representation from both governments. Nearly three-fourth of its total allocation of Rs. 2,750 million has been committed to date. Support has been given across several states, mainly to NGOs. A shift towards CIDA's focus states is expected in the future.

Indo-German Bilateral Project 'Watershed Management' (IGBP)

IGBP is a joint effort of the Government of India's Ministry of Agriculture and the German government. A unit has been specifically set up to work with watershed projects, the rationale being that watershed development is a key theme for the Government of India. The projects are located in AP, Rajasthan, Uttaranchal and UP. The implementing agencies vary in each project. The emphasis is on supporting existing programmes and staff structures and not to create parallel programmes or institutions. The fund is small, but the perception of the office is that the establishment of a specialised set up and long-term commitment enables an active policy dialogue and has an overall policy impact. The focus is on technical assistance.

Royal Netherlands Embassy (RNE)

The Netherlands have been involved in the water sector in India for a few decades. The initial emphasis was on drinking water with a gradual inclusion of sanitation. In line with international policy, the Dutch have been promoted to think in terms of IWRM, though the policy, institutional and capacity-related challenges involved are acknowledged.

Focus states are AP, Gujarat and Kerala. Historical linkages, promising opportunities and lobbying in the Netherlands, influenced this selection. In Gujarat, work is predominantly related to drinking water. Support is also given to the N.M. Sadguru Water and Development Foundation for water harvesting, irrigation and drinking water and sanitation. In AP, there is a broader outlook on water

use and management and its linkages to rural development. Support in AP includes inputs (workshops, consultations etc) to the state government's Water Conservation Mission, mainly for developing a water vision for the state. Other projects, undertaken mainly through NGOs, include watershed development and collective and sustainable use of water for irrigation. Interventions in Kerala, though focused on drinking water in two districts, seek to move towards integrated water resource management. Support is primarily intended for capacity building of PRIs and community organisations through NGOs to realise demand-driven, community-managed approaches. This is considered prudent and opportune given Kerala's rather progressive decentralisation efforts.

Swiss Agency for Development and Cooperation (SDC)

SDC's geographical concentration is in the drought-prone areas with the long-term aim to focus on the Deccan Plateau. SDC's NRM portfolio covers watershed development, JFM, livestock development and agro-diversity. Within this, there are bilateral programmes, partner programmes with larger NGOs and umbrella programmes with smaller NGOs. SDC believes that they have had an impact in India by demonstrating participatory approaches in watershed management and assisting state governments in developing policy and institutional reform measures in the livestock sector.

Future SDC efforts will be re-oriented towards water as a starting point with appropriate linkages to the current portfolio. More substantive roles are envisaged for NGOs and PRIs, along with support for capacity building of PRIs. A programme has been developed for awareness creation of PRIs in Rajasthan. It focuses on the Gram Sabha and complements UNDP's PRI capacity-building work with a state level training institute.

United Nations Development Programme (UNDP)

The UNDP's USD 542,000 Small Grant Facility (SGF) supports innovative pilot projects in water resource management, drinking water supply and environmental sanitation, which have the potential to draw larger investments and influence government policy upon completion. Partner/ contributing donors include AusAID, CIDA, DFID and Ford Foundation. CBOs, NGOs and resource institutions are eligible for short-term (one to one and a half year) grants not exceeding USD 30,000. The SGF, established under a tripartite agreement between the Department of External Affairs (DEA), the Ministry of Environment and Forest (MoEF) and UNDP, is guided by the UNDP's Country Cooperation Framework and the Dublin-Rio principles. MoEF is the designated Executing Agency, while WAPCOS have been nominated the Implementing Agency after WSP-SA withdrew. UNDP's role is confined to monitoring and evaluation. It is premature to talk of lessons learnt given the relatively recent origin of the SGF.

In addition to the SGF, UNDP has a five-year capacity building programme for PRIs. Among its key activities are strengthening of state-level training institutions and developing appropriate curriculum and training material. A Centre for Public Policy is also envisaged within the Indian Institute of Management, Bangalore. The scale of the task- training all PRI representatives, and not focussing on office bearers alone, is considered the most significant challenge along with improving the training infrastructure.

United Nations Children's Fund (UNICEF)

UNICEF's focus in the water sector is on domestic water supply. The organisation has in the past worked with the broader issue of water conservation in India as a means to enhance domestic supply through recharge. Given that field staff lacked background in this, success was mixed. In the

future, work with wider water resource management issues is more likely to be based on advocacy than implementation. The new programme that is being prepared will attempt to focus geographically instead of spreading resources thinly. There will also be further efforts to integrate sanitation and health issues with drinking water. The sector reform, with an increased focus on community management of drinking water, is an overall opportunity but also a challenge to field staff who have not worked with community management in such a comprehensive manner to date.

Water and Sanitation Program – South Asia (WSP-SA)

WSP- SA supports policy change in the water supply and sanitation sector. There has been some consideration to enter into water resource management. In the urban domain, WSP-SA has been advocating institutional reforms in urban water supply utilities through networking with personnel and supporting central government initiatives. Currently, WSP-SA assists AP, HP, Kerala and Maharashtra in taking forward the sector reforms for rural drinking water supply and sanitation. DFID has agreed for programmatic support to WSP to support both rural and urban sector reform. It will also include a challenge fund to leverage reform. Sida has agreed to support WSP for urban reforms.

World Bank

The major Bank lending in water has been for irrigation projects (until recently known as Water Resources Consolidation Projects) and urban water and sanitation projects. Water Resources Consolidation Projects (WRCP) were taken up in different states in partnership with the state irrigation departments for carrying out initiatives to consolidate irrigation development through augmentation of irrigation and management support infrastructure, and to bring in systemic efficiencies and institutional reform. WRCPs have been implemented in Haryana, Orissa, Rajasthan (starting), Tamil Nadu and Uttar Pradesh. The current thinking is to engage in water resource projects only where there is both political commitment and an ability within the Bank to link sector reform with comprehensive fiscal and administrative reform in the state (as is being done in AP and proposed in UP). Apart from this, there is the World Bank assisted Hydrology Project in eight States and five Central agencies aiming to set up improved monitoring and information systems for groundwater.

Rural water supply and sanitation is an increasingly important area for the World Bank after the (reported) successful SWAJAL initiative in parts of UP. In rural water supply and sanitation, the current emphasis is on community-driven and implemented projects and is linked to the sector reform for the rural drinking water supply. The sub-sector operates on the basis of four principles; 1) user participation should be demand-driven, 2) role of the government should be to facilitate instead of provide, 3) partial cost-sharing by users to finance works, 4) improved resource management with a focus on people's management. The WB will only support states that agree to these principles. Currently support is extended to four districts in Kerala, 11 districts in Karnataka, and preparation is on-going for projects in Maharashtra and Tamil Nadu. Districts are selected on the basis of poverty criteria. Separate projects are implemented in tribal areas.

Annex 5: Donor Supported Water Sector Programmes [1]

Andhra Pradesh

- The GBP 45.5 million DFID-supported Andhra Pradesh Rural Livelihoods Project (APRLP) operates in five drought-prone districts. Planned over the 1999–2006 period, it supports scale-up of watershed interventions by supporting capacity-building, livelihood improvement and convergence of schemes and services.
- Over 1998–2001, EC supported model approaches to community-managed water and sanitation in South India. Andhra Pradesh was one of the four states where this was undertaken.
- A three-year research project (2000–3) examines the implications of the participatory irrigation management policy on water resources and functioning of Water Users Associations in Andhra Pradesh. It is funded by the Ford Foundation (about USD 80,000) and implemented by the Institute of Resource Development and Social Management.
- Local water supply and sanitation projects were undertaken by the Public Health Engineering Department (PHED) with support from the Netherlands over 1997–2001. PHED received a grant of Dfl 4,400,000.
- The PHED and other relevant departments, along with the concerned Zilla Parishads, implement UNICEF's USD 818,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.
- The one-year (1999–2000) Water Aid (India)-supported Integrated Community-based Hand Pump Maintenance Programme was launched with 12 partner NGOs of the Viswasamakhya Network. This has been followed by the three-year (2000–3) Integrated Water, Sanitation and Hygiene Promotion Programme. The latter is undertaken through 11 NGO partners of the Jalasamakhya Network.

Bihar

- Bihar is one of the three states where the GBP 9 million Eastern India Rain-fed Farming Project has been working since 1995 (expected completion in 2003). The project pilots new approaches to addressing rural poverty including improved farming systems. DFID is a partner in this project.
- The PHED and other relevant departments implement UNICEF's USD 1,056,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.

Gujarat

- Gujarat is one of the three states (Madhya Pradesh and Rajasthan are the others) where the GBP 23.31 million DFID-supported Western India Rain-fed Farming Project (WIRFP) has been working since 1999 (expected completion in 2006).
- Gujarat is one of the three states (Madhya Pradesh and Rajasthan are the others) where the Community Management of Natural Resources Project is currently operational. One of the largest NGO implemented projects supported by donor funds (EC contribution is Euro 14.4 million), its activities include water harvesting, minor irrigation and watershed development.

- A two-year research project (2000–2) examines ways to promote gender equity in water resources management. It is funded by the Ford Foundation (about USD 50,000) and implemented by the Utthan Development Action Planning.
- A USD 75,000 three-year (2000–3) Ford Foundation grant is provided to the Aga Khan Rural Support Programme as Support for Innovative Initiatives, Capacity-building and Information Dissemination on Participatory Irrigation Management.
- The Embassy of France (Economics, Trade and Finance Commission) provided FF 34 million for setting up of dam fuse-gates by the Government of Gujarat in 1999. Better water resources management was identified as a key outcome.
- Over 1997–2002, the Netherlands supported the Gujarat Water Supply and Sanitation Board (GWSSB) with Dfl 25 million for the Ghogha Regional Water Supply and Sanitation Project in Bhavnagar.
- The GWSSB and other relevant departments, along with the concerned Zilla Parishads, implement UNICEF's USD 515,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.

Himachal Pradesh

- *The AusAID-supported Himachal Pradesh Sustainable Rural Livelihoods Project is currently in the design stage. It seeks* to contribute to the development of sustainable resource management systems for enhancing traditional and alternative livelihood options.
- The Norwegian Agency for Development Cooperation contributed USD 1.6 million to the Himachal Pradesh Environmental Programme over 1994–2000. It included water resource management as an important area of work. The Norwegian Agency has offered a further USD 3.2 million for Development Cooperation for the Norwegian Environmental Programme over 1997–2002. This was in addition to the USD 0.8 million extended over 1999–2002 to select NGOs.

Karnataka

- Implemented through MYRADA and other NGOs, the CIDA-supported Canadian Dollar 1 million Environment Regeneration Project will focus on capacity building, community participation and transforming institutions and water resources management over 1998–2003.
- Covering five villages, the CIDA-supported Canadian Dollar 2.4 million Water Resources Development and Energy Conservation for Sustainable Management of the Environment Project was implemented by BAIF over 1996–2001. Aiming at sustainable management of natural resources for improved quality of life, interventions included water harvesting and land treatment.
- The Danida-assisted four-year (1996–2000) Rs. 396 million Rural Drinking Water Supply and Sanitation Project covered over 100 Gram Panchayats in four districts. A Rs. 110 million cost was borne by the state government.

- The second phase of the Danida-assisted Karnataka Watershed Development Project started in 1997, following the successful implementation of the first phase initiated in 1990–91 in two districts. The project aims to develop an appropriate land use system through soil and moisture conservation and tree plantation work.
- The DFID-supported Karnataka Watershed Development Project (KAWAD) is being implemented in three districts over 1998–2003. Its aim is to meet the needs of the poor in treated watersheds more fully and at a lower cost. The Karnataka Watershed Development Society implements the Rs. 834 million KAWAD.
- Over 1998–2001, EC supported model approaches to community-managed water and sanitation in South India. Karnataka was one of the four states where this was undertaken.
- Being implemented over 1996–2002, the KfW-assisted Rs. 550 million Integrated Watershed Management Project aims to treat over 53,000 ha. It is implemented in association with six NGOs.
- The five-year Indo-Norwegian Environment Programme in Karnataka was implemented with a USD 1 million grant from the Norwegian Agency for Development Cooperation.
- Over 1999–2001, the Norwegian Agency for Development Cooperation provided USD 2.5 million to select NGOs working on water resource management and water quality issues.
- The Indo-Swiss Participative Watershed Development Project, Karnataka (ISPWDP-K) was implemented over 1995–2000 in five districts. The overall objective of this Rs. 189 million project was to support communities in semi-arid areas to improve their livelihoods.
- The PHED, along with the concerned Zilla Parishads, implements UNICEF's USD 500,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.
- Two NGO partners of Water Aid-India work on the three-year (2000–3) Integrated Water, Sanitation and Hygiene Promotion Programme.
- The Karnataka Rural Water Supply and Environmental Sanitation Project is planned over 1999–2004. The World Bank supports this USD 92 million project.
- The World Bank is extending a credit of USD 98.9 million to the Karnataka Community-Based Tank Management Project. The project intends to improve rural livelihoods and reduce poverty by developing and strengthening community-based management in selected water tank systems (2000 in numbers).

Kerala

- CIDA's Canadian Dollar 2 million support for Sustainable Drinking Water Supply in the Humid Tropics of Kerala is scheduled over 1998–2003. Capacity building, community participation, demand assessment, water quality, water resources management are key themes around which CIDA support is woven.
- The Rural Development Department implements UNICEF's USD 400,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.

– The six-year (2000–6) World Bank-supported Kerala Rural Water Supply and Environmental Sanitation Programme aims at improving the quality of rural water supply and environmental sanitation service delivery by promoting a community-driven approach. The USD 65 million project will be implemented in 80 Gram Panchayats across four districts.

Madhya Pradesh

– Madhya Pradesh is one of the three states (Gujarat and Rajasthan are the others) where the Community Management of Natural Resources Project is currently operational. One of the largest NGO implemented projects supported by donor funds (EC contribution is Euro 14.4 million), its activities include water harvesting, minor irrigation and watershed development.

– Started in 1994, Danida's eight-year Rs. 131 million Comprehensive Watershed Development Project operates in western Madhya Pradesh. Project implementation, initially slow due institutional constraints, has improved following Review Mission and revised Project Implementation Plan.

– Madhya Pradesh is one of the three states (Gujarat and Rajasthan are the others) where the GBP 23.31 million DFID-supported Western India Rain-fed Farming Project (WIRFP) has been working since 1999 (expected completion in 2006).

– Currently in the design stage, the eight-year DFID-supported (estimated GBP 100 million) Livelihood Security Mission will work through GoMP's Tribal Welfare Department. Its prime focus is water resources management, transforming institutions, community participation, policy reform and poverty reduction. Another DFID-supported initiative on health (estimated GBP 50 million) is also in the design stage. It will focus on water resource management, rural sanitation, hygiene promotion and health.

– The PHED and the Department of Panchayati Raj and Rural Development implement UNICEF's USD 1,559,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.

Maharashtra

– Over 1998–2001, EC supported model approaches to community-managed water and sanitation in South India. Maharashtra was one of the four states where this was undertaken.

– A seven year project launched in 1996, the Indo-German Promotion of Watershed Self Help Program involves village self help groups in integrated natural resources management on a watershed basis.

– KfW supports Watershed Development in Maharashtra (DM 39 million) following the successful implementation of its efforts initiated in 1994. Another DM 46.6 million from KfW is available for the Maharashtra Rural Water Supply Project started in 2002.

– The Water Supply and Sanitation Department and the Groundwater Survey Development Agency, along with the concerned Zilla Parishads, implement UNICEF's USD 818,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.

– Four NGO partners of Water Aid-India work on the three-year (2000–3) Integrated Water, Sanitation and Hygiene Promotion Programme.

Orissa

- CIDA supports CENDERET and CIFA in wastewater treatment using aquaculture. The Rs. 73 million support is over 2000–5.
- Started in 1992 and extended to 2003, Danida's Comprehensive Watershed Development Project in Koraput seeks to establish a land use system that enables to improve living conditions and supply of food, fuel and other essentials. Project activities include soil and water conservation and plantation.
- Orissa is one of the three states where the GBP 9 million Eastern India Rain-fed Farming Project has been working since 1995 (expected completion in 2003). The project pilots new approaches to addressing rural poverty including improved farming systems. DFID is a partner in this project.
- The DFID-supported ten-year GBP 33 million Western Orissa Rural Livelihoods Project (WORLP) started in 1999. Working in four of Orissa's poorest districts within the GoO's watershed development programmes, WORLP has a strong agricultural component. It seeks to address issues of increased agricultural production and improved food security through a comprehensive natural resource strategy. This includes a focus on soil and water conservation.
- Over 1998–2001, EC supported model approaches to community managed water and sanitation in South India. Orissa was one of the four states where this was undertaken.
- The eight-year Indo-Norwegian Environment Programme in Orissa was completed in 2000 with a grant from the Norwegian Agency for Development Cooperation.
- UNICEF's Control of Diarrhoeal Diseases (CDD-WATSAN) Project was implemented over 1996–2000. It focused on rural water supply and sanitation through community participation and hygiene promotion.
- The Rural Water Supply and Sanitation Organisation implements UNICEF's USD 1,060,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.
- Two NGO partners of Water Aid-India work on the three-year (2000–3) Integrated Water, Sanitation and Hygiene Promotion Programme.
- The USD 631 million World Bank-supported Orissa Water Resources Consolidation Project supports an agreed program for the state's water sector over a six-year period. The GoO's Department of Water Resources is the key implementing agency.

Rajasthan

- CIDA supported the Integrated Watershed Management and Water Storage in Pushkar Lake Project over 1997–2000. The Directorate of Watershed Development and Conservation was a partner in the Canadian Dollar 1.2 million project.
- Rajasthan is one of the three states (Gujarat and Madhya Pradesh are the others) where the GBP 23.31 million DFID-supported Western India Rain-fed Farming Project (WIRFP) has been working since 1999 (expected completion in 2006).

- Rajasthan is one of the three states (Gujarat and Madhya Pradesh are the others) where the Community Management of Natural Resources Project is currently operational. One of the largest NGO implemented projects supported by donor funds (EC contribution is Euro 14.4 million), its activities include water harvesting, minor irrigation and watershed development.
- Ford Foundation lent institutional capacity-building support for a People's Movement for the Integrated Management of Water Resources over 2000–2 through a USD 75,000 grant. Tarun Bharat Sangh was the key partner in this project.
- KfW has provided DM 135 million for rural water supply. The support is for a period of eight years beginning 1994. Further, KfW has approved the DM 31 million six-year long Comprehensive Watershed Development Programme in 2002.
- The PHED and the Department of Panchayati Raj, along with the concerned Zilla Parishads, implement UNICEF's USD 1,650,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.

Tamil Nadu

- Danida's Water and Sanitation Project covers two districts. It started in 1996 and is expected to finish by March 2004.
- Started in the 1990s, Danida's Comprehensive Watershed Development Project in four districts seeks sustainable and cost effective utilisation of several land types to create livelihood opportunities. Project activities include soil and water conservation and plantation.
- A one-year USD 50,000 Ford Foundation grant to DHAN (Development of Humane Action) Foundation was used for Scaling-up Participatory Tank Management and Enhancing the South India Tank Network over 2000–1. A similar duration USD 48,000 Ford Foundation grant was used by the Tamil Nadu Agricultural University to research linkages between Panchayati Raj and tank management over 2001–2.
- The TWAD Board and Department of Rural Development implement UNICEF's USD 450,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.
- Twenty-nine NGO partners of Water Aid-India work on the three-year (2000–3) Integrated Water, Sanitation and Hygiene Promotion Programme.

Uttar Pradesh

- The Uttar Pradesh Jal Nigam and Panchayati Raj Department implement UNICEF's USD 1,200,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.
- The World Bank supported the USD 52 million Uttar Pradesh Rural Water Supply and Environmental Sanitation Project. Initiated in 1996, project completion is expected by 2002.

West Bengal

- West Bengal is one of the three states where the GBP 9 million Eastern India Rain-fed Farming Project has been working since 1995 (expected completion in 2003). The project pilots new approaches to addressing rural poverty including improved farming systems. DFID is a partner in this project.
- UNICEF's Control of Diarrheal Diseases (CDD-WATSAN) Project was implemented over 1996–2000. It focused on rural water supply and sanitation through community participation and hygiene promotion.
- The PHED and the Department of Panchayati Raj, along with the concerned Zilla Parishads, implement UNICEF's USD 1,150,000 Child Environment (Sanitation, Hygiene and Water Supply) Programme. This includes efforts to improve water supply, quality and local resource management.

National

- Since 1999, DFID, World Bank and the Water and Sanitation Program-South Asia (WSP – SA), along with the Rajiv Gandhi National Drinking Water Mission, have supported 'Translating RWSS Policy Reforms into Reality: A Strategy for Change'.
- In association with the Rajiv Gandhi National Drinking Water Mission, DFID, supports the GBP 4 million project for human resource development in the water and sanitation sector. This support is over 2001–6.
- The Food and Agriculture Organization supports training on participatory water management in India as part of a larger Asia-level initiative.
- The People's Science Institute proposes development of a Public Interest Environmental Quality Monitoring Center with the Ford Foundation's USD 150,000 grant over 2000–3.
- UNDP granted USD 300,000 to the Ministry of Environment and Forest (MoEF) during 1999–2000 with a view to furthering environmental health through emphasis on the water and sanitation sector.
- The World Health Organization supported water supply and sanitation in rural settlements during 2001 through a USD 211,000 grant. Rural water supply, sanitation, operation and maintenance, water quality, institutional reform and technical studies were key themes/ issued sought to be addressed.

Appendix 6: References

Barker, R. Koppen van B, Shah, T. (undated) 'Water Scarcity and Poverty'. www.cgiar.org/iwmi/pubs

Carney, D. (1998) 'Sustainable rural livelihoods: what contribution can we make?' Diana Carney. Papers presented at the Department for International Development's Natural Resources Advisors' Conference, July 1998.

Chaudhuri, S. (2001) 'Reconceptualizing poverty assessments to take account of vulnerability'. Workshop on poverty and vulnerability. Third Asia Development Forum, Bangkok, June 13, 2001

GoI (1991) 'Household Tables'. Directorate of Census Operations. Government of India.

GoI (1992) 'National Seminar of Rural Sanitation: Problems, Prospects and Strategies for Future'. Ministry of Rural Development, Government of India. 1992.

ISS (2000) 'Status of Panchayati Raj in the States and Union Territories of India- 2000'. Institute of Social Sciences, New Delhi. 2000.

Kerr, J., Pangare, G., Lokur-Pangare, V., George, P.J. and Kolavalli, S. (1998) 'The Role of Watershed Projects in Developing India's Rainfed Agriculture'. Report submitted to the World Bank. IFPRI, Washington

Loughhead, S., Mittal, O., Wood, G. (2000) 'Urban Poverty & Vulnerability in India: DFID's experiences from a social policy perspective'. DFID

Nautiyal, S. (2002) 'Water Crisis: Agenda for the Century'. YOJANA. February 2002

NIRD (1995) 'Panchayati Raj Institutions in Select States- An Analytical Study'. National Institute of Rural Development, Hyderabad. 1995.

NIRD (2000) 'Patterns of Decentralized Governance in Rural India' (Volume I). Choudhary, R. C. & Jain, S. P. (Eds.). National Institute of Rural Development, Hyderabad. 2000.

NSSO (1998) 'Drinking Water, Sanitation and Hygiene'. Report No. 449. 54th Round. National Sample Survey Organisation. Department of Statistics. Government of India.

Samanta B. B. (1997) 'Role of UNICEF in Transfer of Technology: A Case Study of Indian Rural Water Supply and Sanitation Programme'. Faculty of Commerce, Berhampur University, Berhampur. 1997.

TARU Leading Edge (2000) 'Evaluation of Rural Sanitary Marts and Production Centres'. UNICEF India. July 2000.

TERI (1998) 'Looking Back to Think Ahead: Green India 2047'

Tewari, V. (2001)'Reducing Poverty in India'. Commissioned by the Asian Development Bank.

World Bank (2000) 'Overview of Rural Decentralization in India' (Volume I). The World Bank, New Delhi. September 2000.

Halving poverty by 2015 is one of the greatest challenges of our time, requiring cooperation and sustainability. The partner countries are responsible for their own development. Sida provides resources and develops knowledge and expertise, making the world a richer place.

SWEDISH INTERNATIONAL
DEVELOPMENT COOPERATION AGENCY

SE-105 25 Stockholm Sweden
Phone: +46 (0)8 698 50 00
Fax: +46 (0)8 698 56 15
info@sida.se, www.sida.se