Centre for World Solidarity

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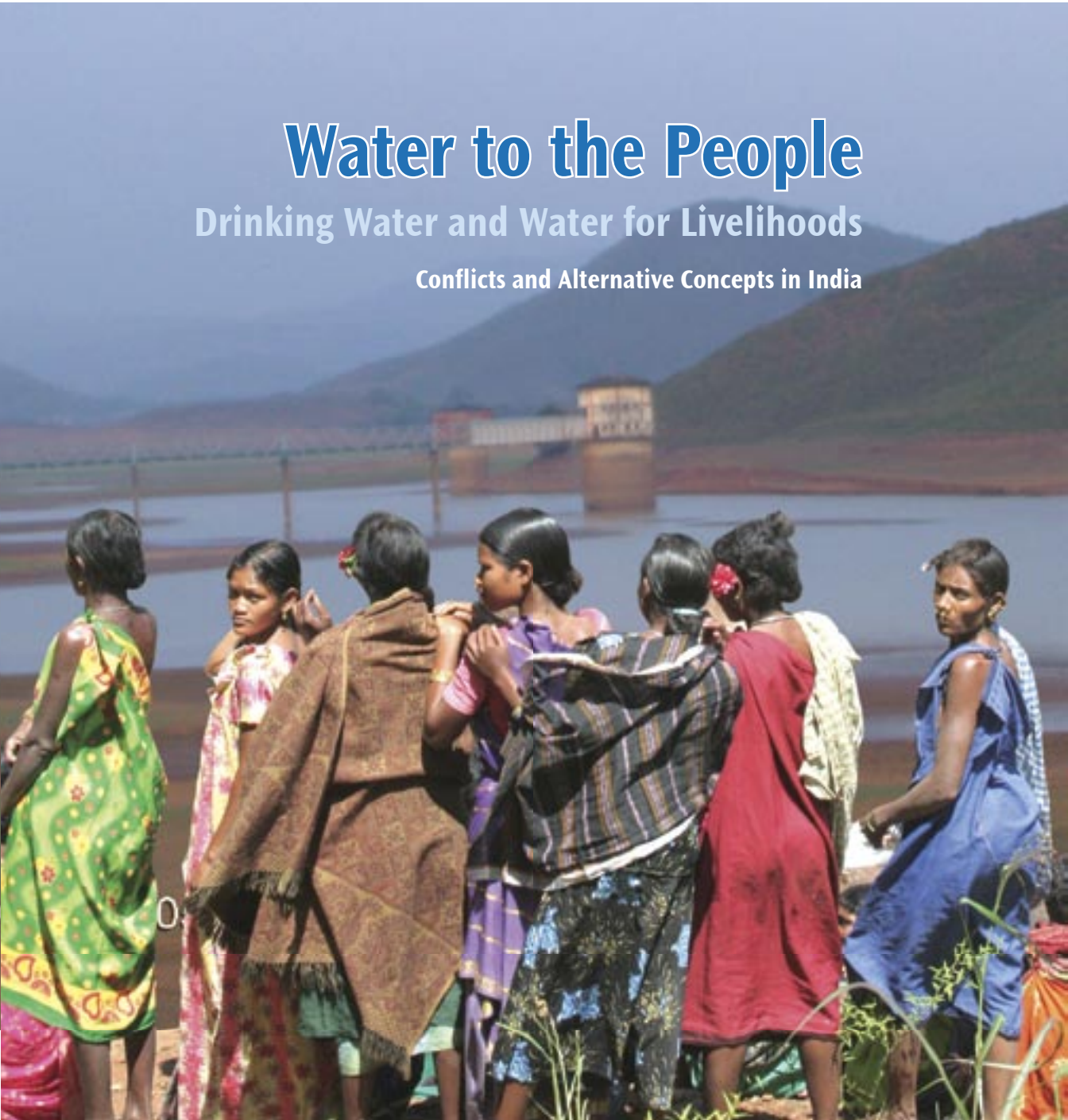
Church Development Service
An Association of the Protestant Churches in Germany

Water to the People

Drinking Water and Water for Livelihoods

Conflicts and Alternative Concepts in India



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By Uwe Hoering

April 2008

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Foreword

Water is the key resource to human life. Drinking water, water for domestic use and water for irrigation are essential for human survival. Poor people are often not poor by money, but poor by water, with millions of them living in adverse conditions. Many live in dry regions where they must traverse long distances to gain access to drinking water sources. They must till marginal, less-productive lands and if they do have irrigation facilities, those are minimal. In South Asia and particularly in the Indian context, economic growth and changing agricultural practices are causing environmental destruction and an over-exploitation of water for commercial purposes. This trend has not only resulted in the further marginalisation of the poor but has opened new conflicts as well. Access to water and control over it is not only a matter of survival but an issue of democratic participation of all citizens in the management of their country's natural resources, particularly as conflicts over water increase in the course of the expected climate change.

The Church Development Service (EED), an association of the Protestant Churches in Germany, together with our partner organisations in South Asia is supporting integrated rural development programmes devoted to watershed development, water harvesting, sustainable agricultural methods which include water saving and conservation techniques, and participatory water management. In 2007, a project named "Water and Democracy: Towards a civil society action on water issues at South Asia level" was initiated in cooperation with the Centre for World Solidarity (CWS), in Hyderabad, India. This programme is a joint initiative involving more than 50 partner organisations in South Asia. Its aim is to facilitate the development of good practices in water management and to support people in their struggle for the right to access and control water as a common natural resource.

The study presented here is part of the Water and Democracy programme. The intention is two-fold: to highlight some of the typical conflicts over water in India, and to present examples of possible solutions. The case studies are introduced by a background analysis of the situation, all of which are defined by lack of access, no democratic participation in water management and increasing conflicts over water in India. The individual case studies illustrate the analysis of growing conflicts over limited water resources in a growing economy.

The activities of partner organisations presented here in this document range from developing practical hydrological tools for documenting groundwater depletion and efforts to improve the social organisation of water management, to social mobilization and political campaigning. This is a limited collection of case studies and is in no way representative of the array of activities currently being carried out by partner organisations. What this case study collection does do is offer insight into promising attempts and successful models of how joint efforts, using a broad range of technical, social and political knowledge, can assist people in their struggle for drinking water as well as water for agricultural use, water as an energy source and for the environment. These examples are also meant to inspire the debate on water and encourage new ideas of democratic water management to form and take hold.

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Acknowledgements

When I visited the village of Madirepalli in Andhra Pradesh farmers left their fields in spite of harvest season, eager to share their experiences and aspirations with me. The women of the Resource Protection Committee in the village of Palayaseevaram discussed till late in the evening about their problems with sand mining, sugar factories and conflicting interests between exploiting and protecting the Palar river, which reached into their own families. These are just two examples of the support and inspiration I received from many people and communities for collecting information and stories for this study – too many to name all of them here. Additional background information from EED partner organizations, from other NGOs, and from academics, namely Dr. Janakarajan (Madras Institute of Development Studies) helped me to put them into context and perspective. The immense logistical challenge of visiting so many places in a rather short period of time was not only shouldered by the organizations I visited, but also by CWS and Ms. Avanthi N Rao, who accompanied me on some legs of my tour, providing me among many other things with the special experience how to travel with 15 pieces of luggage on an Indian train. My gratitude goes to all of them.

Uwe Hoering

The case studies collected represent the working experience of the following organizations within the network of EED-supported partner organizations.

Rural Integrated Development Society (RIDS), Anantapur, partner organization of **Centre for World Solidarity (CWS),** Hyderabad

Gandhian Unit for Integrated Development Education (**GUIDE),** Chengalput, Tamil Nadu, partner organization of **Centre for World Solidarity (CWS),** Hyderabad

Community Health and Social Education Trust (CHASE)/Participatory Action Collective Tamil Nadu (PACT), Madurai, Tamil Nadu

Nadi Ghati Morcha (NGM), Raipur, Chhatisgarh, partner of **Indian Social Action Forum (INSAF)**, New Delhi

Manav Adhikar Seva Samity (MASS), Sambalpur, Orissa, partner organization of **Church's Auxiliary for Social Action (CASA), Bhubaneswar**

Integrated Rural Development of Weaker Sections of India (IRDWSI), Semiliguda, partner organization of **Orissa Development Action Forum (ODAF).**

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Executive Summary

Challenges

The crisis in the water sector, caused by environmental destruction, growing demand from industries and cities, and general neglect and wastefulness, is having an increasingly negative impact on the access to water for agricultural, industrial, and drinking purposes, especially in rural areas. Worst hit are poor and marginalized groups such as women, who are in charge of providing drinking water to families, the Adivasi and Dalits who have weak water rights, and small-scale farmers. Although the right to life as guaranteed under Article 21 of the Indian Constitution is defined by the Indian Supreme Court to include health, safe drinking water and livelihood, the human right to water is far from being secured for every citizen. There is still no safe, sufficient and sustainable access to drinking water and sanitation. Water pollution is on the rise, groundwater resources are receding and wells for drinking water and irrigation pumps for small farmers are drying up. This puts the water crisis right at the interface of the economic, agro-climatic, ecological and social transformation in India.

Despite the many comprehensive (and at least on paper, very good) water laws and regulations already in place, and although many institutions devoted to water management issues already exist, implementation of a socially fair and democratic water governance is still lacking. Furthermore there are competing rights systems defining the ownership of water sources, especially over groundwater. Statutory laws are often to the disadvantage of India's poor sections with traditional, community or customary rights.

In the face of increasing conflicts between cities, industries and rural areas, within agriculture, and between men and environment, a new approach to water management is necessary. There is an urgent need for just, democratic and equitable forms of water governance. Many observers agree that strong social mobilisation efforts and "grass

roots democracy" are needed to bring people together to work toward a common goal and to generate visions and proposals for solutions. Most civil society organisations advocate a rights-based approach involving strong community participation and an eye toward sustainable and equitable development. The formal democratic set-up and the devolution of governance provide a political environment conducive to solving conflicts over water use and developing solutions for the protection of resources, supply and demand management, and allocation to different users. At the same time new legislation contains provisions such as the National Water Policy, modified in 2002, and the 73rd Amendment to the Constitution, which transfers powers and responsibilities to the elected local leaders of the Panchayati Raj Institutions (PRIs), are considered by NGOs as an opportunity to introduce a more democratic, decentralised and locally controlled water governance.

Case Studies

With the increasing scarcity of water and the growing conflicts and threats to the right to water and livelihoods, many communities, organisations and movements all over India have taken up the cause. As in Orissa, Andhra Pradesh and Tamil Nadu, groups and communities all over India are claiming the right to water – for energy and agriculture, for consumption, for cattle, for washing and bathing. Using the rights-based approach, they are building people's awareness, and they are helping them organise and demand their rights. Furthermore, they are strengthening community management to improve availability and access, restoring watersheds, tanks, and canals.

Broadly: two distinctive areas of action

In many parts of India, people have started to deal directly with conflicts. They try to increase pressure on the government by demonstrations, lobby and advocacy networks to act according to constitution and laws, some of them supported by development NGOs and partner organisations of EED. The first three case studies belong to this area of action: People in Sivagangai near Madurai stopped Coca Cola and Shakti Sugar Mills from establishing a soft drink bottling plant which would have caused depletion and pollution of groundwater. PACT/Chase played a catalytic role and iniated a broad based campaign which supported the villagers in their struggle. At the Palar river in Tamil Nadu, where overexploitation for cities and industries as well as pollution

and sand mining threaten the livelihoods of thousands of families, organisations like GUIDE supported village Resource Protection Committees and a 'Water parliament'. Simple technologies, developed by CWS in Hyderabad and handled by the people themselves, such as participatory water monitoring and water budgeting, can help to build an own-knowledge body. At the Sheonath river in Chhattisgarh, after the river had been privatised" " by a company to supply industries with water, communities of farmers, fishermen and landless labourers, often Dalits and Adivasi, got organised against violations of their rights and successfully explored ways and means of bringing the river back into the public domain.

Parallel to this, local populations and communities supported by development organisations like RIDS and ODAF have attempted to take advantage of the space provided by new legal and institutional approaches to water management, which include broader participation opportunities and responsibilities for local governance like the Panchayati Raj Institutions, to develop alternatives under their own control. Villages like Madirepalli in Andhra Pradesh and Putsil in Orissa are examples where communities have developed their own solutions for irrigation and for energy supply, often based on traditional knowledge, technologies and social organisation and guided by principles and concepts like sharing water and non-competitive democratic mechanisms. These methods are opposed to mainstream policies like big centralised infrastructure, commercialisation and privatisation.

To strengthen these various practices and to replicate them in other areas not only demands stronger support from NGOs and EED's partner organisations, but also greater support and recognition from governments and within international development policy. A legal and institutional environment that includes community activity and supports this kind of change must be created. Panchayats, for example, sometimes find it very difficult to fulfil their tasks and responsibilities due to the lack of funds. Or they are biased against poorer communities, replicating the power structures in the villages by excluding women, the landless and those of lower castes.

Conclusions

The case studies presented and discussed in this paper represent selected aspects of an "alternative paradigm" for water governance that both includes and benefits resource-poor populations.

Mobilisation and voice

As illustrated by the battle against the plundering of the Palar River, the overexploitation of groundwater by Coca Cola at Sivagangai and the "privatisation" of the Sheonath River, the mobilisation of local resistance is an empowering way to act against the loss of resources and rights violations. This has to be backed up by organising and networking in order to give local demands for the right to water more weight. Democratic platforms like "Water Parliaments", multi-stakeholder fora and participatory technologies such as water monitoring and budgeting can help strengthen political interventions and support the building of strength and voice among organisations of economically and politically weaker sections of society, eventually growing into a counterweight to dominant forces.

Public goods

The defence and revival of community water rights and common property resources is part and parcel of the struggle against exclusion and for the protection of rural livelihoods and local economies. Like in the case of the Palar River struggle, this means challenging the State to implement policy that benefits all citizens. Additionally, the case studies prove that local people can regain and/or acquire the knowledge and skills necessary to successfully install and operate infrastructure that really works as a public good for the welfare of all.

Local control in resource allocation

Regulation of water allocation by the State or the market tends to exclude economically and politically weaker sections of society. The model of social regulation and water-sharing like in Madirepalli, on the other hand, is an example of inclusion. It is a model based on cooperation instead of competition. Supported by democratic discussions about water use and cropping systems, it also shifts the rules of private user rights over groundwater to public resource control. It reverses the trend towards commodification and individual economic interests towards the priority of livelihood production and resource sharing within the community. Such mechanisms also function as an entry point for an economically and environmentally sustainable rural economy based on small-scale agriculture.

Sustainable Development

In the projects documented in the case studies, water management is often being used as an entry point for an alternative development model geared toward balancing economic efficiency with social equality and environmental sustainability. This is especially relevant for marginal areas and for millions of people with limited assets such as land, water, capital, and political influence. Control over resources and decentralised infrastructure also gives power to the people in a political sense, enabling them to decide for themselves. This could be a very practical understanding of democracy.

The case studies also show that the existing livelihood resources still available to marginalized groups can be better utilised with approaches centring on people's control over the natural resources in their vicinity. This could be broadened and replicated if public finances, policy, and extension services gave these approaches greater recognition and support. At the same time, these projects can also help improve government policies, which would perform better when combined with social regulation, participatory monitoring and other community-based activities. This is also a challenge to the State to shift the priorities away from big projects like multipurpose dams and river linking and towards small-scale programmes, renewable energies and decentralised solutions.

Finally: water cannot be tackled as an isolated issue. It is an integral part of resource distribution and allocation in any given society as well as a precondition for building an alternative development paradigm. A water-based social movement could therefore become a mobilising and uniting force for building alliances with other initiatives working to defend common property resources such as public land, forest or biodiversity. Such a broad movement could also align with policies upholding public services against the threats of being dismantled and privatised in the name of efficiency and global competitiveness.

Introduction

Names like Hirakud, Bhakra or Nagarjuna, some of the largest dams built in Asia, stand for the hopes connected to the use of water for India's development. Multipurpose projects store water in huge artificial lakes for the irrigation of millions of hectares of land, transforming the country from food deficiency to food surplus, and generating electricity for cities, industries and water pumps. India's first Prime Minister Jawaharlal Nehru therefore called mega-dams like Bhakra the "temples of modern India". Today, the euphoria of those early days has evaporated. They came at a high cost, not only financially, but also in human terms. These projects displaced hundreds of thousands of people and caused vast environmental destruction. And they have betrayed the hopes of thousands of farmers who are still waiting to be connected to irrigation schemes.

Today, the euphoria of those early days has evaporated. Dams came at high costs, not only financially, but also in human terms.

Nestling in the hills: the power house of Putsil

The small brick structure standing in the middle of the terraced green paddy fields near Putsil, a remote village in Koraput district, Orissa, looks more like an ordinary village house than a hydro power plant. But with its generator, switch boards and wires it is just that. The penstock brings the water from the small check dam up the river which has been built mainly by the villagers themselves. And it serves its purpose very well, supplying energy to the village of Putsil – without eviction, displacement or deforestation. Paradoxically, the only conflict is with the Power Corporation of Orissa which considers the structure "illegal" because it was not properly licensed.

The penstock brings the water from the small check dam up the river which has been built mainly by the villagers themselves.

Like in Putsil, there are groups and communities all over India claiming their right to water – for energy and agriculture, for consumption, for cattle, and for washing and bathing. Furthermore, they are strengthening community management to improve availability and access, restoring watersheds, tanks and canals. The fight for the right to water is an essential part of the struggle to conserve the environment as well as for sustainable, just and equitable development because the State and various governments largely failed to manage water for the benefit and well being of all.

Government policy: Good on paper ...

The Constitution of India guarantees every citizen fundamental rights to equality, life and personal liberty.[1] The Supreme Court has defined the right to life, guaranteed in Article 21 of the Indian Constitution, to include health, education, a pollution-free environment, safe drinking water and livelihood. Various courts have upheld that the right to clean and safe water is an aspect of the right to life. Therefore access to safe and sufficient drinking water

[1] The following section is based on INSAF: Water laws in India, Bangladesh, Nepal and Pakistan – A Status Report (draft), January 2008

and sanitation is a fundamental right. The constitution explicitly states that no citizen shall be subjected to any restriction with regard to the "use of wells, tanks, bathing ghats". This is a very important statement in the Indian context, because marginalized sections of the society like Dalits have been excluded for centuries at the community-level from accessing common water resources by dominant castes – and in many places they still are. Thus, the constitution aims to overcome mechanisms which establish control over water as a distinct source of power and identity in the hierarchical caste system.

The central government oversees the implementation of national policy on resource development and exploitation, and manages the country's inter-state and transnational rivers.

But judgments even by the Supreme Court do not constitute law or policy. Unlike at the international level, with the UN General Comment No 15 on the Right to Water (2002) based on the International Covenant on Economic, Social and Cultural Rights, India has no laws or policies which assert that water is a fundamental and inviolable right to be enjoyed by every citizen of the country. The "right to water" can therefore be obtained in India only on a case-by-case basis by going to court. Deprived groups and communities must fight for this right themselves.

India does not have unified or comprehensive water laws. Water-related provisions are dispersed across various acts, central and state laws, constitutional provisions and court decisions. The primary responsibility for the development of water belongs to the individual states. The central government oversees the implementation of national policy on resource development and exploitation, and manages the country's inter-state and transnational rivers. In 1987, following a severe drought affecting the entire country, the Centre framed a *National Water Policy*, which laid down certain principles and recommendations such as water-conserving crop patterns, water-conserving irrigation and production technologies, raising canal water charges and promoting user participation in canal management. But it did not

identify the institutional mechanisms needed to define and enforce limits to individual and collective water withdrawals.

The 1987 *National Water Policy* was modified in 2002. Major policy additions included recognition of the role of private sector participation and the need to shift from development of new projects to performance improvements in existing ones. Several states like Orissa, Maharashtra, Andhra Pradesh and Chhattisgarh came out with their own water policy statements along the lines of the National Water Policy. Some of the key principles of the policy are:

Several states like Orissa, Maharashtra, Andhra Pradesh and Chhattisgarh came out with their own water policy statements along the lines of the National Water Policy.

- in the allocation of water, usually first priority should be for drinking purposes, with irrigation, hydro-power, industrial and other uses following in that order;
- groundwater potential should be periodically re-assessed and its exploitation regulated with reference to recharge possibilities and considerations of social equity;
- appropriate organisations should be established for planned development and management of river basins;
- water should be made available in areas where there is a shortage by transfer from other areas including transfers from one river basin to another;
- distribution of water should be with due regards to equity and social justice;
- water rates should be such that they foster motivation for economy in use, and should cover maintenance and operation charges and a part of the fixed costs; and
- farmers should be involved in the management of irrigation schemes.

On paper, many policies sound good. For example, the *National Water Policy* advocates a participatory approach to management of water resources and non-conventional methods for utilization of water like artificial recharge of groundwater and traditional water conservation practices like rain-water harvesting.

Successive Five-Year-Plans invested a lot of money into the water sector as well. According to L.C. Jain, a former member of India's Planning Commission, over the last 50 years India has spent $50 billion on developing water resources and another $7.5 billion on drinking water. Water rates for operation and maintenance (O&M) were recovered by revenue departments and government used to maintain the irrigation canals. Apart from big dams and irrigation systems, the government has encouraged the digging of millions of tube wells and bore wells run by electric and diesel-driven pumps that now provide half of the country's irrigation.

Water rates for operation and maintenance (O&M) were recovered by revenue departments and government used to maintain the irrigation canals.

... but less so in practice

In spite of fairly good laws, a multiplicity of institutions and quite an amount of money poured into the water sector, India, with a sixth of the world's population, faces a rapidly growing water crisis, both in the urban and rural areas – and this crisis is hitting the poor and marginalised the hardest.

Farmers near Chengalput

- The commitment made by the central government in the National Water Policy adopted in 1987 of providing water to all citizens of India by 1991 had to be revised several times. In 2006, official government data cited in the UNDP report (HDI index) claims that 86 per cent of the population had access to safe drinking water, fewer in the rural areas and even fewer to adequate sanitation facilities, ranking India 126 out of 177 countries in this regard. However, even these figures do not mean that there is a continuous and regular supply of clean water for several hours daily throughout the year and nothing near to a 24x7 supply modus. In areas where water is scarce, rural women must travel long distances to wells or streams to fetch water for their daily needs.

There is a growing scarcity of water, mainly due to overexploitation and pollution.

- Water pollution is another serious problem with 70 per cent of India's surface water and an increasing number of its groundwater reserves contaminated by pollutants. Over-use of pesticides and chemicals in agriculture is the primary cause for groundwater pollution in rural areas, while effluents of cities and industries are released untreated into rivers and lakes.
- There is a growing scarcity of water, mainly due to overexploitation and pollution. Due to the highly variable nature of the climate, groundwater represents one of the most important water sources in India as an alternative for irrigation and domestic water use Around 80-90 per cent of rural drinking water needs are met by groundwater, and groundwater serves around half of India's net irrigated areas. Already, the potential of most river basins is being exploited more than 50 per cent and several basins are considered to be water scarce like the Palar River Basin in Tamil Nadu. Water logging and salination are widespread problems in irrigation schemes, and irrigation by wells has depleted groundwater resources, dramatically affecting agricultural production in the country's "bread baskets" like Punjab, Haryana and Andhra Pradesh negatively. Growing industrialization leads to increasing water

and energy needs: coal and steel plants, aluminium smelters, sponge iron factories in Orissa and Chhattisgarh, pollution by pharmaceutical industries in Andhra Pradesh, textile and leather production (the situation at the upper Palar River being just one example) are highly water-intensive activities and highly pollutive.

- One-sixth of the country is prone to drought, and with climate change and erosion there are increasing threats of desertification like in parts of Orissa. As a solution to the droughts and growing water scarcity, ambitious technical mega projects like the linking of 31 rivers across the Indian peninsula are being proposed by the government. However, the technical and economic feasibility, as well as the human costs and the ecological consequences of the mega-project are questionable.

Clearly, the current water development and management system is not sustainable.

Clearly, the current water development and management system is not sustainable. As the World Bank warned in its report *India's Water Economy – Bracing for a Turbulent Future* (2005), unless dramatic changes are made soon in the way in which water is managed, India will have neither the cash to maintain and build new infrastructures nor the water required for its economy and its people. Many observers and researchers share this assessment of the situation – but differ on the strategies how to cope with it.

The Human Right to water – and water rights

Water is the source of life. The human right to water is therefore a fundamental condition of human survival, health and wealth. The International Covenant, General Comment No 15 (2002, p. 1-2) on the Right to Water (Articles. 11 and 12 of the International Covenant on Economic, Social and Cultural Rights) states that "the human right to water is indispensable for leading a life in dignity…and entitles everyone to sufficient, safe, acceptable,

physically accessible and affordable water for personal and domestic uses". Elsewhere in the Covenant, the right to water is related to the right to health and the right to food. Although India has signed the Covenant, the right to water is not explicitly included in India's Constitution. Some articles of the Constitution can be interpreted as recognizing the right to equal access to water.

Another striking example for the lack of guarantees of rights in laws, policies, institutions and management is that India does not have any specific law defining ownership and rights over water sources. In terms of river water and lakes, rights are defined by land and State irrigation acts. Government is granted absolute rights over this water. For the use of canal water only usufruct rights – not ownership rights – are granted. Typically, use rights are granted only to people who own land in command areas. Thus, new legislation on irrigation, which provides for greater user

Tank with Naga shrine and lingam near Ullavoor

participation and reduces the State's role in water management, usually legalizes the property rights of landowners only. In the process, landless populations who hitherto enjoyed rights over community water resources are excluded. Generally, water rights and land rights are interwoven and this poses problems of equity and social justice.

Box: Customary water rights in Tamil Nadu

Customary water rights (different from statutory rights) were gained or acquired by water users over a very long period of time. Though customary laws varied from state to state, they had some common ground such as community rights and informal arrangements. These customary laws had many advantages compared to statutory rights, being more in tune with the needs of the people than dogmatic about certain fixed notions of territorially or ownership rights. In Tamil Nadu for example, in tank and traditional canal irrigated areas the customary rights over water were well codified much before the British period.

The traditional irrigation institutions are characterized by several social arrangements and social responsibilities. Historically, the community of water users undertook all critical functions of water management including the construction of small diversion weirs and canal networks. The water rights enjoyed by community members were indeed gained by them due to their hard work in construction as well as in maintenance. The community had complete control and access over water resources within their jurisdiction. The system was functioning well and there existed well laid out rules and regulations to undertake all critical functions of water management such as system maintenance, water sharing in particular during times of scarcity, conflict resolution etc.

Putting water under government control – first during colonial times, then continuing after independence – caused customary social maintenance structures to break down. Additionally, the introduction of bore wells and pumps enabled private control and ownership of irrigation which in turn weakened farmers' interest in the collective effort for maintaining traditional irrigation systems. The recent legislation on the creation of associations of water users has resulted in marginalizing traditional water managers at the village level called *Neerkattis* in Tamil Nadu. With the exception of a few pockets here and there, traditional ways of water management and conservation like the tank systems in central areas have broken down.

A. Rajagopal/S. Janakarajan, *Water Rights and Participatory Irrigation Management in India: The Case of Surface Water Sector in Tamil Nadu State* (no date)

More specifically, there is no law that explicitly defines groundwater ownership. Every landowner has the right to "collect and dispose" of all water under the land within his own limits, and all water on its surface that does not pass in a defined channel. Hence, the owner of a piece of land does not, strictly speaking, "own" the groundwater; he only has the right to collect and use the water. However, it is customarily accepted across India that a well on a piece of land belongs to the owner of that land, he may extract as much water as he wants, and others have no right to extract water from the well or restrict the landowner's right to use the water.

New threats from economic liberalisation and industrialisation ...

Technology parks, Special Economic Zones, shopping malls and sprawling housing estates are sprouting up all over the country.

The "temples" of contemporary "modern India" are much different from the "temples" Jawaharlal Nehru envisioned five decades ago. Technology parks, Special Economic Zones, shopping malls and sprawling housing estates are sprouting up all over the country. Today's economy claims to be less dependent on agriculture, with industrial production, the service sector and foreign trade soaring. With up to 90 per cent of the population in the rural areas live from agriculture, subsistence farming and smallholder agriculture is still the most important basis of food production and livelihood security. So far, the new economy has not yet created sufficient employment opportunities for the landless and underemployed. Millions of farmers are still struggling with the uncertainties of the monsoons – and with the additional demand by industry and cities, which puts pressure on water resources and irrigation agriculture.

- Recent data indicates that demand from the domestic sector, with places like Chennai or Madurai already putting immense pressure on groundwater resources in peri-urban and rural areas around the cities, will double over the next twenty years to 52 billion m3. The fleets of private tankers supplying

drinking water to urban consumers and the growing bottled water industry with international as well as national companies add a further problematic dimension to the already strained availability of water to communities for their basic survival needs. "It would appear that water as a commercial good has replaced the State's obligation to ensure availability to the community of basic minimum quantities of affordable water," writes Wilfred D'Costa.[2]

- Economic liberalisation and the booming economic growth in the last decade is also increasing the demand from industries. So-called Special Economic Zones (SEZ), hundreds of them, are the latest in the promotion of industrial development by offering attractive preferential conditions to investors. In terms of access to water, for the people living in areas where these are coming up this means a diversion of water for use by the industries within the zones, either from rivers and existing dams, or by their right as landowners to extract groundwater, thus posing a threat to the groundwater table. Another negative impact is the release of more effluents.
- Another threat is the boom in the mining sector which is already responsible for large-scale deforestation, loss of topsoil, destruction of water resources, discharge of toxic effluents and the dumping of toxic wastes. Furthermore, thousands of people - mostly Adivasi - have been uprooted and displaced without proper resettlement and rehabilitation. India's huge reserves of minerals (bauxite, iron ore, coal, etc.) attract both national and international companies, often in joint ventures, and like the aluminium plants, for example vastly increase the demand for water. Other upshots include environmental destruction and displacement, as experienced with bauxite mining in Orissa.

Thousands of people - mostly Adivasi - have been uprooted and displaced without proper resettlement and rehabilitation.

2 INSAF: *Water laws in India, Bangladesh, Nepal and Pakistan - A Status Report* (draft) January 2008.

One of the manifestations of this emerging competition and complexity is conflict, which in some areas has reached "threshold level of crisis", exploding into "water wars".[3] One such case occurred on November 6, 2007 in Western Orissa, where some 30,000 farmers who relied on the water from the Hirakud Dam for irrigation, stormed the reservoir area. Claiming that there had already been a reduction in irrigation from the reservoir beginning in the 1990s, the government allowed the allocation of water to the aluminium, steel and iron industries and power plants in the region as part of the State's industrialization drive. Protests were sparked off when the aluminium company Hindalco started laying pipes for a second lift-off plant from the reservoir. Apart from such competing demands from industry, agriculture and cities, other conflicts occur for many reasons, ranging from over-use, pollution and declining water quality to emerging rural-urban water markets and the commodification of water, the latter issue being one of the most hotly contested.

The penetration of markets into the countryside, fast urbanization and rapid industrial expansion add new dimensions to already existent water management problems and pose fresh challenges to distribution.

Conflicts arise mainly due to the failure of conventional water management strategies, the lack of a new water governance and the lack of comprehensive policies for resolving emerging challenges. The penetration of markets into the countryside, fast urbanization and rapid industrial expansion add new dimensions to already existent water management problems and pose fresh challenges to distribution. They easily explode into conflicts. The crisis of water management is right at the interface of economic, agro-climatic, ecological and social transformation in India.

In the face of increasing conflicts all over the country, a new approach to water management is necessary. There is an urgent need for just, democratic and equitable forms of water management, related to availability, affordability, access and use as rural and urban

[3] See S. Janakarajan, *From Confrontation to Collaboration: Multi-Stakeholders' Dialogue As An Approach Towards Sustainable Development* (no date), p. 2

drinking water, for agriculture, industries or the environment. While most civil society organizations advocate a rights-based approach with strong community participation, oriented towards sustainable and equitable development, influential international funding organizations like the World Bank propose the withdrawal of the State from the actual water management. Their focus is on promoting the private sector to take over the water management, initially in the urban drinking water sector. Public-private partnerships are envisaged but in other countries like Morocco and Egypt they are already being implemented for irrigation schemes. Furthermore they advocate greater investments in large infrastructure financed with public money from government and donors, more autonomy for individual users like farmers, and the introduction of the principle of full cost recovery and commodification, without considering the nature of water as an essential and indispensable condition of survival.

Their focus is on promoting the private sector to take over the water management, initially in the urban drinking water sector.

.... and new room for water democracy?

Strongly influenced by international donor agencies like the World Bank, new legislation like the modification of the National Water Policy in 2002 and of the Model Groundwater (Control and Regulation) Bill in 2005 or the Policy Guidelines on Swajaldhara 2002 came up in the last years. This brought about a marked change in government water policy, making the principle of water as an "economic good" equal to if not more important than the understanding of water as a "social good", "common property" or even as a social right. Along with this understanding of water as a commodity the related principle of full-cost recovery was promoted. Payment by the water users not only for operation and maintenance (O&M) but for capital investments as well are to replace the widespread practice of subsidising urban, industrial and agricultural water supply with public money alike, which tends to benefit the richer water users more than the poor, who often have to pay for water because public supplies fail to reach them. Thirdly,

in response to the widespread failure of public utilities and much like in other economic sectors, private companies were encouraged to participate in the water sector, initially in the potentially more profitable segments such as urban drinking water supply and the delivery of bulk water to industries, but later and in the long term in irrigation agriculture as well.[4] Not only the question of whether "private" is actually more efficient than "public" (as claimed by proponents of privatisation like the World Bank) is hotly debated, but also whether the standard recommendation of full cost recovery reduces the right to water to those water users who have the purchasing power to buy water and to develop intelligent solutions of socially balanced water charges.

Earlier policies treated water as belonging to the State and to private landowners and did not envisage any active role for the communities in water management.

At the same time, there are provisions in the new legislation which are considered by some as an opportunity to make room from a more democratic, decentralised and locally controlled water governance. These new regulations try, for example, to reduce the State's role in water management and to strengthen "user participation". Such mandates often sound good on paper. Earlier policies treated water as belonging to the State and to private landowners and did not envisage any active role for the communities in water management. Lately, however, there are has been move toward creating a framework for decentralized governance of water and water infrastructure thanks to large-scale implementation schemes for various watershed and tank management projects throughout India, many of them supported by the World Bank, the Asian Development Bank and other international financing and development institutions. The World Bank is supporting sector reforms and Participatory Irrigation Management (PIM) in many states for rural drinking water and irrigation. With PIM, the power of cost recovery is now given to Water User Associations.

4 Uwe Hoering, *Water for Food – Water for Profit. The World Bank's policy in the agricultural water sector* (2005); www.menschenrechtwasser.de/downloads/Water_for_Food_Hoering.pdf

Box: Paying for water?

Obviously, many people are paying for water, and not only for bottled mineral water. Urban consumers in poor neighbourhoods without sufficient public water supplies have to pay private water tankers for their bucket of water, farmers without enough water pay their neighbours with stronger pumps and better groundwater resources, and during droughts, farmers order tankers to bring water from far away to rescue the crops. The huge investments and subsidies into the water sector by the State mainly benefit the better-off users like well-connected consumers in the cities or farmers in irrigation systems, who pay very little for connection fees or management. This is clearly not only an injustice; it also costs the State a lot of money. These problems are an important part of the raging debates about "privatisation" in the water sector and the elements of a new water governance.

As a solution, the World Bank, governments and an increasing number of NGOs, too, advocate an increase in the payments by the water users to achieve cost recovery. While for the rural irrigation systems the target is to recover the expenses for operation and maintenance (O&M) plus part of the investments – normally 20 or 30 per cent – urban consumers should shoulder the full costs including the investments, and if the water supply is run by a private company the profit margins too, of course.

Naturally, these proposals have kicked off a huge and controversial debate and numerous protests against "privatisation", because full cost recovery is often seen as a first step in making private operations profitable. There are provisions to protect consumers with low incomes like block tariffs, making water more expensive for higher consumption, or even a specific quantity of "free water" like in South Africa. One of the crucial questions is: Where is the limit for cost recovery and affordability for consumers? It is quite clear that full cost recovery is hardly possible in most countries where the majority of people are poor or in irrigation agriculture, unless the poorer sections are again left out from the supply or are even squeezed out because they can no longer afford the tariff increase. Again it would be the richer users who would be able to cope with rising prices. It is clear that some kind of government subsidies would still be necessary to develop and maintain a sufficient water infrastructure that reaches all.

Whereas cost recovery only involves the payment for the supply of water, for hardware such as canals and pipes, and for management, with the introduction of tradable water user rights, water itself gets a price tag. Like land, rights holders can sell their water rights permanently, creating a water market far bigger and comprehensive than the present localised water sales. Aside from the issue of cost recovery, the reform of water-user rights, which are largely unregulated rights as in the case of groundwater, is the second contentious issue in the debate about the "privatisation" of water. Again there is the fear that by trading user rights, water will flow where the money is, especially in times of scarcity – away from poor farmers and food crops with low profitability towards "high value" cash crops for urban and export markets, i.e. to industries and urban consumers able to pay higher prices.

These projects and programmes, involving water-user associations and watershed committees organised around water resources in a watershed or a village, give people an important institutional outlet at the grass-root level.

Such new legal provisions for participation and decentralisation in water governance could make room for a more self-determined water management at the local level. Take, for example, the Panchayati Raj institutions. Under the 73rd Amendment to the Constitution, states may transfer powers and responsibilities to elected local leaders with regard to minor irrigation, watershed development and water supply for domestic, industrial and commercial purposes. In some states like Andhra Pradesh, village panchayats are given the responsibility of operating and managing water supply schemes and collecting water charges for that purpose. But panchayats are finding it very difficult to manage due to non-recovery and lack of funds. In other states the devolution of power to the panchayats has not occurred at all, whereas the devolution of powers and responsibilities over drinking water to Zilla Parishads (ZPs) has. These district councils are also responsible for rural water supply schemes and must establish a water conservation and drinking water supply committee.

Under the 73rd Amendment to the Constitution, states may transfer powers and responsibilities to elected local leaders with regard to minor irrigation, watershed development and water supply for domestic, industrial and commercial purposes.

But results are mixed and depend very much on the local situation. Often the power structures in the villages are replicated. While higher castes and powerful landlords dominate, women, the landless and people belonging to the lower castes are excluded. Initially welcomed by many NGOs and civil society organisations as a opportunity for marginalized groups, such as the Adivasi, Dalits and women, to gain access to decision-making at the local level, the village representative system is now being criticized by the same institutions for their inefficiency and corruption. Others try to use the local governance institutions to strengthen the bargaining power and rights of the weaker sections by giving capacity building to Dalits, Adivasis and women.

Agricultural labourer at a pump house near Chengalput

Drinking water for the village or Coca-Cola for the cities?

The case of Plachimada, where the multinational soft drink giant Coca-Cola was allowed to pump groundwater for its bottling plant for a mere small concession fee, causing not only water pollution but depleting village and field wells, became a true test for the rights of local self-governance. In March 2004 the local panchayat revoked the company's license to draw groundwater. The Indian subsidiary of the global player went to court claiming that only the State and the central government had jurisdiction over its operations but lost. In August 2007, the Kerala state government confirmed that the village council's jurisdiction over such projects is constitutionally guaranteed, thereby strengthening the concept of village democracy and self-administration (www.indiaresource.org/campaigns/coke).

"The State has got a duty to protect groundwater against excessive exploitation and the inaction of the State in this regard will be tantamount to infringement of the right to life of the people guaranteed under Article 21 of the Constitution of India. The groundwater, under the land of the 2nd respondent (i.e. Coca-Cola), does not belong to it.

"The underground water belongs to the general public and the 2nd respondent has not right to claim a huge share of it and the Government has no power to allow a private party to extract such a huge quantity of groundwater, which is a property, held by it in trust."

High Court of Kerala, quoted by Vandana Shiva, *Coke, Pepsi and the Policies of Food Safety,* September 6, 2006

At the same time the example of Plachimada illustrates that changing external paradigms such as water marketing, exploitation by companies and the entry of private companies into water services are emerging as a threat to local governance and community rights over water resources. In many cases new legislation and programmes establish individual private ownership based on land ownership instead of common property and community control. They also tend to promote public-private partnerships between companies and municipalities to supply water to urban consumers or industries. In the process, landless populations who hitherto enjoyed rights over community water resources are virtually expropriated. Thus the traditional exclusion by poverty, ownership and the caste system continues or even worsens, posing a threat to rural livelihoods by more or less silently siphoning away water resources from rural areas and small-scale farming.

However, the right to property in India is not absolute. It is not a fundamental right, and government has the power to restrict it in the interests of the larger public good. Hence, the government has the right as well as the obligation to regulate use of groundwater in the interests of justice, equity and environmental protection. In this context, there is a need to strengthen community initiatives

to effectively counter expropriation and erosion of traditional community rights and reclaim control over local resources.

Fight for your rights - but how?

In a democracy, turning to the parliament and to the courts is one way of challenging unlawful developments or violations of rights. NGOs and members of civil society often engage in lobby and advocacy work at various government levels for the human right to water. Professor S. Janakarajan, a water expert with the Madras Institute of Development Studies (MIDS), agrees that there is no plethora of strong water and environment laws or institutions devoted to environmental and water issues. All this exists. But he also points out that implementation has been weak and mostly failed. "Existing legal measures are unhelpful not because laws are particularly ineffective but the law enforcement and monitoring mechanisms are spineless. Judicial activism, remnants of which could be witnessed in a few historic judgments delivered by the highest judicial authorities of India, were unable to travel too far due to feckless monitoring mechanism and corrupt governance." For example, in spite of a "fantastic judgment" by the Supreme Court, ruling that the leather industry responsible for polluting the water used for agriculture at the upper Palar River should either close down or install treatment plants (EPTs), there had been no follow-up action, because "government thinks in terms of forex and employment". The industry lobby is just too strong, Janakarajan explains, making it impossible for social movements to successfully implement improvements. He concludes that in spite of democracy, there has been little success resisting environmental destruction in the water sector by resorting to laws, governments or courts. "Formal democracy does not give an answer". What is needed is a strong social mobilisation and "grass roots democracy", which can bring people together to work toward a common goal and to generate visions and proposals for possible solutions. This could be truly democratic and would include participatory

The industry lobby is just too strong, making it impossible for social movements to successfully implement improvements.

panchayat institutions as well as mechanisms outside the existing political systems such as "Water Parliaments" or multi-stakeholder dialogues (see Chapter 2.1.). Only then can they become a strong pressure group when it comes to negotiations and influencing government or legislative processes.

With the increasing scarcity of water and the growing conflicts and threats to the right to water and livelihoods, many communities, organisations and movements all over India have taken up this challenge. Some of these organisations are being supported by development NGOs and EED's partner organisations. Using the rights-based approach, they are building people's awareness on the human right to water, and are helping them to organise and demand their rights. Broadly speaking, there are two distinctive areas of action:

Some of these organisations are being supported by development NGOs and EED's partner organisations.

- In many parts of the country, people have started to deal directly with conflicts. Struggles in defence of their rights have been organised, some of them successful, some of them failed. By way of demonstrations, lobby and advocacy networks, people are beginning to increase pressure on the government to act constitutionally and in accordance with national law, to protect and fulfil the right to water legally and institutionally, and to control and regulate private companies.
- Parallel to this, local populations and communities supported by development NGOs are trying to utilise the space provided by new legal and institutional approaches to water management, which include broader participation opportunities and responsibilities for local governance over resources, to develop alternatives under their own control. They are often well equipped for this. Many traditions of water management are still remembered and could easily be revived. They know their own needs and capacities best, using local inputs as much as possible. If they are able to obtain sufficient space, control and the financial means they would indeed be well-positioned to

save irrigation schemes through better maintenance and water management, to protect and recharge depleting groundwater reserves and even develop rain-fed areas, where the majority of poor communities still live. This would be a positive step toward solving the water crisis.

Accordingly, this study first focuses on two areas where conflicts around common water resources have arisen, namely the Palar River in Tamil Nadu and Sheonath River in Chhattisgarh. The communities in these two regions organised against violations of their rights and started exploring ways and means of conflict resolution. Secondly, villages like Madirepalli in Andhra Pradesh and Putsil in Orissa are examples where communities started to develop their own alternative solutions, often based on principles and concepts contrary to mainstream policies in the water sector, such as big centralised infrastructures, privatisation, pricing and markets. NGOs and EED's partner organisations experienced in these areas are increasingly engaged in launching and supporting such programmes. But government support is needed, too, to create an enabling legal and institutional environment for such community activities.

This study firstly, presents cases where conflicts around common water resources have arisen, and secondly, examples where communities started to develop their own alternative solutions.

Struggles for the right to water

2.1 The Palar River is everywhere

The problems are only too visible. Standing on a hillock with a small temple and a water tank overlooking the wide plains south of Chennai, the "sins against water" are everywhere to be seen – sand mining, groundwater depletion, pollution. In the wide dry bed of the huge Palar River dredgers are busy filling hundreds of trucks with yellow sand, used mainly as binding material in the construction industry of the mega-city Chennai, destroying the water holding capacity of this unique hydro-geological formation. Next to the lines of trucks there are dozens of wells and pumping

Sand mining in the Palar river, with bore well in the foreground

stations, depleting the groundwater in order to keep cities and industries supplied. Finally, there is a huge sugar mill releasing its effluents into its backyard, turning vast areas of land into a stinking lake.

Women at the forefront

The smell from the nearby sugar factory is awful. "And everything is covered with ashes", the women of the Resource Protection Committee (RPC) in the village Palayaseevaram complain. Worst of all, the mill's effluent is being discharged into a village tank which is used to provide irrigation to more than 400 acres. This tank has been a part of the water management system for a thousand years, a system with more than 600 artificial tanks along Palar River. Furthermore, the factory has blocked the water flow into one of the main spring channels which also supplies water to the village tank.

"We complained several times about the pollution from the mill,"say the women. "But nobody listens".

Kanniga, Anandi, Munirma, Saraswati and Tanilmani explain why they, the women, are in the majority in the RPC, a body initiated by the Chengalput-based development organisation GUIDE. Men often migrate, moving where the work is. With few other jobs available, men also work as labourers in illegal sand mines, for example. Women, on the other hand, "stay local" and have a special relationship with the land. "We complained several times about the pollution from the mill,"say the women. "But nobody listens". They even held a demonstration in front of the mill which was dispersed quickly by the police. The sugar barons are well connected to politicians in the state capital, and officials from the environmental department are entertained at the posh guest-house. So petitions and complaints fall on deaf ears. When the head of the panchayat complained about the pollution, the factory filed a case against him and he was arrested and held for a month. "We don't know what to do," says Anandi shrugging her shoulders in frustration.

Palayaseevaram is just an hour's drive away from Chennai, right on the Palar River.[5] It used to be an agriculturally prosperous village benefiting from the river water for irrigation with groundwater for supplementary irrigation. Like in many other villages along the Palar River, spring channels which had their origin in the river or its tributaries, irrigated the fields. With the Green Revolution, the introduction of high-yielding varieties of rice, pesticides and industrial fertilizer into irrigated agriculture, more and more farmers switched to well irrigation. But when the huge pump houses in the riverbed were built by the Tamil Nadu Water Supply and Drainage Board (TWAD Board) and began pumping water to adjoining areas of Chennai and to towns like Chengalput, the water level fell beyond the reach of the farmers. The area under paddy and sugarcane went down dramatically. Farmers changed to tree planting or sold their land to operators of brick kilns, agents of urban growth invading the country side. As the water levels in the pump wells went down, the dry seasons brought a serious shortage of drinking water with open wells drying up completely. And because sand mining in the riverbed was carried out far beyond the legally permissible limits, the deep "sponge" of sand which had accumulated over the course of tens of thousands of years and was responsible for recharging the groundwater wells and tanks of the villages, was drastically reduced. Paradoxically, water scarcity is hitting Palayaseevaram like many other villages located along the river.

With the Green Revolution, the introduction of high-yielding varieties of rice, pesticides and industrial fertilizer into irrigated agriculture, more and more farmers switched to well irrigation.

Before the industry of sand mining was introduced to the area around eight years ago, women could get drinking water at a depth of two to three feet. "It was very sweet," the members of the RPC recall. Now there is only dry sand. They have filed complaints against sand mining, they blocked the road in protest against sand mining several years ago and four months ago they demonstrated

[5] S. Janakarajan, *Strengthening city marginalized peri-urban villages: Interventions through stakeholder dialogues for inclusive urbanization. The case study of Chennai, India* (no date)

in front of the collector's office. What about attention or support from politicians and parties? "They are all the same." After being elected into power, they forget about their campaigning promises and join in the game of turning water and sand from a resource belonging to all into a private money making machine i.e. into a commodity.

Women like Kanniga and Anandi try to cope the best they can. Kanniga once owned a small piece of land but when brick kilns were set up all around her, she lost access to her plot and was forced to sell. Employment for agricultural labourers is dropping because there are fewer farmers, and some are using mechanical harvesters. So she is earning additional income with soap making. Although the negative impacts of sand mining are known to the small farmers and other Dalits, her husband works for a truck owner. Some young women have found work in the new factories coming up in the industrial zones around Chennai. The women from the RPC grow organic vegetables on a separate small plot; the RPC has also de-silted a pond, raised saplings to plant along farm bunds and tank bunds, and they hope that the present government of Tamil Nadu will keep its election promise of giving two acres of land to each family. What they learned is that "no isolated local solution will work" and that occasional complaints to authorities simply do not work. The only way is to bring all affected villages together.

The women from the RPC grow organic vegetables on a separate small plot

Chennai – The thirsty metropolis

The pump houses in the Palar River bed are visible signs of the competition between the rural and the urban worlds, between *Bharat*, the Hindi name for the country and modern India. So are the trucks taking sand from the river bed. Pumping water and mining sand – both are licensed and permitted by the government in the name of "development". On paper everything seems to be properly regulated and under control. The Public Works Department issues

licenses to contractors which are controlled at checkposts when trucks enter and leave the sand mining area. But there are many ways to cheat the system and business have found out how to take out more tons of sand than allowed or how to use the same license several times. There are also illegal sand-miners who unlawfully access other areas of the river and its tributaries like the Cheyyar. Even panchayat members are involved in this profitable business.

"This is available gold," explains Professor Janakarajan from MIDS in Chennai. And it's one of the reasons why it is so difficult to successfully stop the exploitation of sand and the subsequent depletion of the ground water reservoir. With the economic boom, with the growth of the cities and the spread of the industries, there is an increasing demand for resources such as water and sand, pulling down restrictions like licenses or other regulations. Farmers and villagers are in a weak position vis-à-vis those with money and economic and political power, such as aspiring house owners, building companies and municipalities. Local resistance and demands for stronger regulation by stricter licensing, quotas or higher prices, as Gilbert Rodrigo, director of GUIDE, proposes, would not only affect the legally and illegally operating truck owners, but wide sections of society as well.

Farmers and villagers are in a weak position vis-à-vis those with money and economic and political power, such as aspiring house owners, building companies and municipalities.

Without access to a perennial river, tanks and reservoirs are Chennai's major sources of water supply.[6] These must supply water for the metropolis' six million plus inhabitants. With demand increasing due to urban growth, water supply augmentation measures such as the Telugu Ganga Project have been implemented to draw water from the Krishna Basin in the state of Andhra Pradesh, some 400 km away. As this is still not enough, a large number of well fields have been identified in adjacent districts. Chennai's Metro Water Authority constructed thousands of overhead tanks and hired hundreds of

[6] S. Janakarajan, *Strengthened city, marginalized peri-urban villages: Interventions through stakeholder dialogues for inclusive urbanization* (no date)

trucks to make water deliveries to underserved areas. Furthermore, urban growth has caused land prices in the surrounding districts to shoot up. The village commons – land and traditional water bodies such as tanks – are encroached upon for housing schemes.

Besides providing groundwater for villages and agriculture along its course, the Palar River has become, as Gilbert Rodrigo from GUIDE put it, "the second highest provider of water for drinking and industrial purposes for Chennai city in recent years". Chennai and smaller cities nearby such as Tambaram, where the international airport is located, compete with the rural population for the Palar River water. Besides the city's official pipelines and tankers, there is also a huge armada of private water tank lorries mining the surrounding farmland for water – both legally and illegally – and transporting drinking water to the consumers in the city. They buy from private landowners who control a bore well and choose to sell their water instead of using it for agricultural purposes. One-third of all bottling water companies are located in Tamil Nadu. These companies make huge profits since it costs them nothing in licensing to extract groundwater. Thus, acute water scarcity coupled with inefficient governmental provisions has made those involved in that water business rich in just a short span of time.

Besides the city's official pipelines and tankers, there is also a huge armada of private water tank lorries mining the surrounding farmland for water – both legally and illegally – and transporting drinking water to the consumers in the city.

Existing water laws and related laws like the Environmental Protection Act of 1986 protect local livelihoods from environmental degradation and impacts due to over-exploitation of natural resources including water. But, what is lacking is effective implementation by governments and authorities. Governments are granting permits to companies without making the necessary scientific assessments of threshold limits for extraction in light of local resources and needs.

While some farmers also might benefit from selling water to the private water barons, many others are on the losing side when the groundwater dries up. Often enough they are heavily in debt due

to investments in well irrigation and other inputs. Water shortage affecting agricultural activities leads to increased unemployment in the villages and eventual migration. And women are worst affected. They not only spend long hours walking and carrying water from taps and open wells, but worry and care for family members struck by waterborne diseases. When they sow the rice they worry whether the water will be enough to produce a good harvest.

Metro Water Authority, private water traders, industries, truck owners and building contractors – it is a mighty force indeed that the villagers of Palayaseevaram, Pullambakkam or Adavapakkam are up against. The water and sand-mining activities enjoy legitimacy more or less because they are either authorised by the state as the owner and custodian of the public goods, or they are recognised as private transactions perfectly normal in a market economy.

The water and sand-mining activities enjoy legitimacy because they are either authorised by the state as the owner and custodian of the public goods, or they are recognised as private transactions perfectly normal in a market economy.

As a "public property" the Palar River must satisfy the needs of various groups, admits Rama Mohan from Centre for World Solidarity (CWS). It follows that the government must take up the interests of other users of public resources as well. The problem is that the process of allocation is neither fair nor transparent and is therefore open to abuse. Authorities and influential companies can push through their interests while other stakeholders, such as the villagers are not allowed equal involvement in the decision making process. As a result, weaker groups are forced to find different strategies and tactics for articulating their rights and defending their interests.

Giving people a voice

Arunachulam, a groundnut farmer with one hectare of land and a shallow well, has been at the forefront of the struggle against the six bore wells installed by the Public Works Department (PWD) in the riverbed next to the village of Pullambakkam. PWD did this without informing the villagers. Earlier there was never any water

Arunachulam, a groundnut farmer

scarcity in the village. When the wells went dry they started their protests, first with petitions, then with *dharnas* (fasting). Finally two years ago they blocked the main road. This "*rasta roko*" drew considerable attention, causing a strong police force to turn up and even the District Collector and the Deputy Superintendent of Police came. Finally, they struck a deal. The PWD agreed not to take water if the level went down too low during the agricultural season when water was needed to irrigate the fields. But the department also took revenge for its defeat and destroyed some of the farmers' illegal wells found on public lands along the river banks.

The villagers from Pullambakkam were supported by the RPCs formed in many villages along the Palar River, mainly run by women. They unite at the block and district levels to discuss issues and to organize collective actions. They are also linking up with wider networks of NGOs, civil society organisations and CBOs like the Palar Protection Movement and the Tamil Nadu Campaign for

the Protection of Water Resources. Their non-violent "weapons" include petitions, *dharnas*, demonstrations, human chains, cycle rallies, and media attention.

Despite, however, numerous local RPCs, several successful actions, broad media coverage and networking with other groups and NGOs, the Dalits, small farmers and village women still remain quite isolated. They are weak stakeholders in this new commercial arena focused on the exploitation of the local natural resources. If not followed-up properly, successes turn out to be short-lived. A more regular, systematic and comprehensive approach is needed.

To this end, GUIDE has invited people from different background and ways of life to participate in a so-called Water Parliament for the Palar Basin. Unlike the District RPCs, which comprise of elected members from village committees and the block level, Water Parliaments are made up of students, members of other NGOs, villagers, panchayat presidents, leaders of farmers and others who use this open platform to join together in the name of protecting local water resources. There is a lively exchange of views on successes, activities and challenges in the hotel in Chengalput, where the "parliament" is in session. In Advapakkam, people spontaneously prevented miners from taking sand from the Cheyyar, one of the main tributaries of the Palar River, by direct action. In Sembakkam, 1,000 people blocked the road when officials from the PWD came to inspect the bore well. Others point out that there is less agriculture due to sand mining and reduced ground water. A student from a higher secondary school demands: "Let us promote a people's movement". Delegates from Pullambakkam report that they didn't enjoy their victory for long. PWD started pumping again when the rains were good last season. First the villagers didn't worry because there was plenty of water in their wells and tanks. But now the groundwater level is receding again. So they want to discuss strategies of resistance and protection.

If not followed-up properly, successes turn out to be short-lived. A more regular, systematic and comprehensive approach is needed.

Gilbert explains his vision of a Water Parliament as an autonomous democratic institution, saying that support for the struggles must be broadened with mobilisation going beyond the immediate or primary stakeholders, who are directly affected and whose livelihoods are threatened, The parliament is therefore to have members from all over the district and from all walks of life. A very important aspect is its ability to bridge the rural-urban divide in interests. Everybody affected, whether positively or adversely, by sand or water mining from the Palar River, even water users and civil society groups from Chennai, "who want the resource to be used in a sustainable manner", should participate, says Gilbert. They have to be made aware that the water and sand they use is being taken away at the expense of the rural population and of agriculture. This leads to loss of land and livelihoods, to a lack of food and income for farmers and agricultural labourers. Gilbert hopes people will want to participate organisations like the Water Parliament out of a clear desire to help protect the environment or to engage against resource depletion or rising unemployment. Efforts like these can help counter political pressure and strengthen the position of those who wish to protect the Palar River.

Box: Multi-stakeholder Dialogues

Professor S. Janakarajan from MIDS favours multi-stakeholder dialogues (MSD) that bring conflicting parties to the table with the goal of finding solutions acceptable to a wider group of stakeholders. So he managed to convince the owners of the tanneries polluting the water of the upper Palar River and the agitated farmers to talk to each other after years of hostility, which was, as he claims, "by itself a success". And in the decade-old Cauvery conflict about the distribution of water between Karnataka and Tamil Nadu where several tribunals failed to deliver results, groups of farmers and leaders of peasant organisations from both sides have, after several rounds of negotiations, worked out water sharing solutions. "We could do something that the Supreme Court could not do." It has to be a give and take, Janakarajan says. "Otherwise the farmers will not find any water anymore."

Water budgeting – know your water situation

When it comes to proving that PWD and other pump houses are stealing the groundwater from the villages next to the river, the villagers are obviously at a disadvantage. PWD can claim that the complaints are exaggerated and that the amounts pumped are in compliance with the agreed upon limits. How do villagers get an exact read on the availability of water? After the monsoons water levels are visible. Ponds and tanks are filled and the groundwater level is just a few feet deep. But what about the dry season? What about the groundwater when it is receding?

"Equip the local people with sound knowledge," advises Rama Mohan from the Centre for World Solidarity (CWS) in Hyderabad. CWS is developing a water monitoring tool and is training staff members from smaller NGOs such as GUIDE as well as villagers in the basics of water monitoring and negotiating water rights. In order to become capable managers of their own water resources, local stakeholders must have the skills to measure the water availability properly and to generate scientifically viable knowledge about the water potential in a given region. This knowledge would enable them to substantiate their arguments effectively vis-à-vis PWD and other outside resource users.

In order to become capable managers of their own water resources, local stakeholders must have the skills to measure the water availability properly and to generate scientifically viable knowledge about the water potential in a given region.

Kannappan, a farmer from the village of Ullavoor, slowly inserts a long plastic line with markers into one of the bore wells next to the river. After some time a clear peep is heard, indicating that the line of the electronic water level indicator has made contact with water. Kannappan reads the depth of ten feet. Back in the village the data is registered in a large book but also written on a black board on a wall near the small village temple for everybody to see.

Another component of the village water monitoring system is a small weather station to measure the amount of rainfall. Data collected from these stations can help substantiate the complaints of the villagers in Pullambakkam and other villages along the Palar

Water metering helps to know your water status

River who observed lower groundwater levels after several PWD pumps had sunk into the riverbed next to the village. Accurate facts and figures back up claims and complaints which are otherwise quickly pushed aside by more powerful stakeholders. Hard data will help them improve their own water management in the long term. They can use this information to adjust their own usage patterns in an economic way, avoid over-exploitation and discuss which crops should be planted in the next season based on water availability.

Right now, these are only the first attempts in water budgeting. Most of the tools and methods available are too technically sophisticated for common use, Rama Mohan says. Therefore there is a need to compile and assess existing methods and tools based on user-friendliness with the ultimate goal of developing a set of instruments designed to enable and empower community resource monitoring.

To this end, CWS is working on a basic and simple module which would help them to ascertain the inflow within any given region, say a Panchayat or a watershed. "This is a simplified and better way of budgeting and it's generated from our own experience in groundwater management, too. Now we have started applying this in the Social Regulations Project from the current year onwards and we're also educating partner NGOs on this," says Rama Mohan. CWS also circulated its module to be field tested in order to gain useful feedback for eventual improvement. Basic information like the rainfall of a given period can be measured. The water available in surface water bodies will also be taken into account when working out the volume of water available. Locals can then work out usage and distribution patterns. By calculating the human and animal population, they are able to arrive at the water needs for drinking water and for livestock. They would also take into account the crops of the year and calculate the consumption for irrigation. This they could cross-verify with the horsepower of the motors and the average number of pumping hours. Such information will provide an overall picture of just what portion of local water resources is actually utilised for local use. Data may also help them determine whether the water used is beyond the permissible percentage of recharge. Proper recharging of the water table is the ultimate indicator for sustainable use.

Locals can then work out usage and distribution patterns. By calculating the human and animal population, they are able to arrive at the water needs for drinking water and for livestock.

Participatory water monitoring with farmers has been encouraged for the last three years in four social regulation project villages (see section below: 'Less is more – Sharing and social regulation'). One immediate upshot of these kinds of participatory efforts is that farmers gain insight into how water levels fluctuate and how rainfall varies. One of CWS's long-term goals is that farmers begin to understand the relationship between water use for crops and groundwater depletion. This water budgeting tool is also useful to extrapolate extraction of groundwater for different cropping patterns. Grassroots NGOs can generate different scenarios of

extraction for different cropping patterns and facilitate discussions at the community level. "Ultimately, the objective is to facilitate farmers sharing water from a bore well to be able to plan their crops based on the water levels and availability," says Rama Mohan.

Participatory monitoring of water resources for better control and management of local resources is the first step in helping communities understand the resource status and develop collective solutions. The technical tool would empower villagers to conduct their own sustainability impact assessment that looks at both their own local water consumption and as well as commercial use by outsiders. Next steps will include the institutionalization of the process in local governance initiatives at a larger scale and policy advocacy to strengthen the role of communities in groundwater governance. Capacities of the communities have to be built through training,

A simple tool: Water level indicator

exposure visits and continuous dialogue in order to arrive at balanced water supply and demand mechanisms. In other words, a standing conflict resolution mechanism will be developed at the community level. In this context, action-oriented research would emerge as an important element of the water democratization process, supporting future Water Parliaments or Multi-stakeholder Dialogues with hard facts gathered by the communities themselves.

2.2 In defence of Common Property Resources – Privatisation of groundwater and rivers

Initially, most people in Plachimada, a hamlet in the southern Indian state of Kerala, welcomed the new neighbour who promised job opportunities, development and economic growth. The panchayat was therefore happy to issue the licence for Hindustan Coca-Cola Beverages (CBP), the Indian subsidiary of the multinational soft drink giant, to pump groundwater for the production of Kinley mineral water and soft drinks. It took a few months before they realised that these were empty promises. The plant, the largest of India's 50 bottling units producing for Coca-Cola, extracted so much water that wells in the surrounding areas fell dry. In other areas, the water turned brownish. Over-extraction resulted in higher concentrations of calcium and magnesium in the water, making it unfit for drinking and cooking. Discharges from the plant and effluents containing chemicals contaminated the soil and water. With the exception of a few locals, nobody from the surround area was given jobs.

The plant, the largest of India's 50 bottling units producing for Coca-Cola, extracted so much water that wells in the surrounding areas fell dry.

When the people in the surrounding villages, mostly tribal, realised that their new neighbour turned out to be a threat to their livelihoods, protests began – first petitions, then demonstrations and then blockades of the plant. Finally, the panchayat refused to renew the water licence. After national and international campaigns in solidarity with the people in Plachimada and long, drawn-out legal wrangles with Coca-Cola defending its access to water tooth

and nail, the plant was forced to stop operations in May 2004. The struggle made headlines well beyond India. But there are similar struggles going on in various parts of the country. Bottling plants are sprouting like mushrooms, often operating in already water-stressed areas, like in Tamil Nadu.

Stopping Coca-Cola in Sivagangai

People in Sivagangai, a district town west of Madurai, celebrate their victory every year. They successfully stopped Coca-Cola even before Plachimada's struggle with the giant. Unlike in neighbouring Kerala, where discontent manifested itself in angry protest only some time after the bottling plant began operations, the agitation in Sivagangai was a pre-emptive one.

People in Sivagangai, a district town west of Madurai, celebrate their victory every year. They successfully stopped Coca-Cola even before Plachimada's struggle with the giant. Unlike in neighbouring Kerala, where discontent manifested itself in angry protest only some time after the bottling plant began operations, the agitation in Sivagangai was a pre-emptive one. The joint venture between the multinational company Coca-Cola and the local company Shakti Sugar Mills, a long-time supplier of sugar for its soft drinks, never got off the ground, even though the plant had already been built, the machinery installed, and the management confident that the production licence from the state authorities was in the bag.

It all started in 2003. After hearing at the 2003 Asian Social Forum in Hyderabad that due to growing resistance, Coca-Cola might move from Kerala to Tamil Nadu and use the Shakti Sugar factory near the village of Padamathur in Sivagangai district as a new base, PACT/Chase, an NGO based in Madurai, initiated a broad-based campaign and formed a Joint Action Committee (JAC) together with a Dalit human rights organisation, a *palmyra* workers organisation and the CPI (M). "It was important for the success to have political parties on board," remembers Fatimson T., convener of PACT. Under the leadership of a local NGO called IRCDS, people were ready to take up direct action and joined the struggle in large numbers because they felt their resource for drinking water was under threat and they feared water pollution.

On April 28, 2003, more than 7,000 people, a substantial number of them women, defied a ban order to participate in a rally against

Shakti Sugar Mills. The protesters raised slogans denouncing the attempts to appropriate a common natural resource and deprive the people access to it. They also realized that chemical waste discharged from the unit may cause environmental problems and diseases like in Plachimada. The police registered cases against 1,900 people. The rally was preceded by a three-month long campaign during which the Joint Action Council distributed handbills, organised post card campaigns, fact finding missions, talks with the media, and dialogues with PRIs. Posters, meetings and street plays created awareness among the people of the potential impact of the bottling unit's operation on their water resources. Youth and women's organisations, particularly self-help groups for women, played a significant role in the campaign.

The protesters raised slogans denouncing the attempts to appropriate a common natural resource and deprive the people access to it.

Water resources in the area were already under pressure due to low rainfall, sand mining in the Vaigai river and water-intensive cropping. Vaigai, the main river in this area, has always been an important source for water schemes and agriculture. Check dams and irrigation canals have been built upstream in order to meet the increased irrigation needs of the farmers and to supply water to Madurai, the biggest city in southern Tamil Nadu.

Sugarcane processing is very water intensive and polluting. Even without the additional plant, Shakti Sugar was already depleting groundwater reserves and adversely affecting the drinking water schemes with two deep wells in the riverbed of the Vaigai River, getting the water almost for free because the government wanted to attract industries. Desperately, the management claimed that the Coca-Cola plant would not require much additional water. But none of the members of the Joint Action Council was allowed to inspect the premises to confirm that it was just a packaging plant, not a bottling plant. "It could take up production tomorrow," said Kumar, one of the local leaders during a visit to the plant in 2005. Security personnel monitors and records every movement around the plant, which is a huge building partly hidden behind trees

and surrounded by high fences, and near the pumping station in the sandy bed of the Vaigai River. And once starting operation, Kumar added, it could easily change into another water guzzling monster.

The struggles were also fuelled by the anger of sugarcane farmers. They complained that the mill did not pay the government-fixed price for their supplies to the factory and for several years payments were not made promptly. The mill management blamed the delay on adverse market conditions while observers suspected that it diverted money for an ethanol plant. Subsequently, the payment of wages to over four lakh agricultural workers employed for harvesting was delayed for months. In this tense atmosphere, the news about Coca-Cola poured oil into the fire. But it was not the farmers, who were at the forefront of the struggle, says Fatimson T., convener of PACT. The sugar growers themselves were in a fix; they wanted sufficient water for their crops, but they also needed the sugar factory. It was the organised *coolies*, the agricultural labourers, and small farmers – and of course the women – who were afraid, that with Coca-Cola their plight would only worsen.

The sugar growers themselves were in a fix; they wanted sufficient water for their crops, but they also needed the sugar factory.

A huge conference held September 2003 in Madurai on the "Corporatisation and Commercialisation of Water", drawing people from the villages, academics, political organisations, and NGOs alike and receiving wide media attention, was the last nail in the coffin for attempting to give Coca-Cola refuge in that part of the country. Due to the protests and the pressure, the "host" Shakti Sugar withdrew its support for the bottling plant. Another favourable factor for the success was that the owners of Shakti Sugar came from the same caste background as the farmers and were active in Gandhian institutions. The government also dragged its feet on issuing the production licence – and the whole project faltered, before it got off the ground.

Privatisation of Sheonath River

"All this water as far as the eye can see belongs to me," boasted Kailash Soni, chief executive officer (CEO) of Radius Water Limited (RWL), as quoted in the media some years ago.[7] Pictures showed him on board a boat riding on the Sheonath River, stretched to the horizon like a lake. According to an agreement with the Industrial Development Corporation of Madhya Pradesh, signed in 1998, he "owns" 23.6 kilometres of the river in Chhattisgarh's Durg district to supply up to 40 million litres water daily (MLD) to the nearby Borai industrial estate. This case of "river privatisation" made headlines not only in India but worldwide.

To store the water of the Sheonath, RWL built a 200-meter anicut across the river, much higher than normal barrages, with three-meter metal gates that operate automatically as a flood regulating barrier system. The reservoir with the pump houses spreads over three km upstream. The RWL is not the only company claiming the right to the water from the river. There are pump houses taking water for the nearby city of Durg and next to it there are others supplying water to the township of the huge Bhilai Steel plant.

The reservoir with the pump houses spreads over three km upstream. The RWL is not the only company claiming the right to the water from the river.

For the farmers, the fishermen and the *dhobis*, the washermen, this mutation of a public resource into a private profit-making venture meant much less fun. Sheonath River which enters Chhattisgarh in Durg district and flows into the Mahanadi River, has been a source of livelihood for them for centuries. The RWL anicut has resulted in them losing water for their fields. The ghats, the flights of steps leading down to the water, which were used to wash clothes or for bathing, were submerged. Fish could not travel upstream any more.

"There were floods because of the barrage," recalls Shiv Kumar Nishaad, a village leader from Mohali. The right to collect sand

[7] Asha Krishnakumar, People's battle for a river, in: The Hindu 07.11.2003

Anicut and pump houses at Sheonath rive

from the river bank is now vested in the hands of RWL. As a result, the panchayat of Rasmara village is incurring an annual loss of revenue of up to Rs. 90,000 per year received by awarding contracts for collecting sand. "And there was much less fish," adds Dukaluram, one of the many fishermen from the Adivasi communities who lost their livelihoods. Villagers in upstream areas were stopped from taking water from the river and downstream the flow was cut by the barrage and the riverbed went dry. Farmers who grew vegetables were forced to abandon this lucrative business.

What upset villagers the most was the high-handedness of the company people who tried to control every well and diversion canal along their stretch of water, and who claimed the right to the groundwater as well. Some even destroyed electricity sources, took away farmers' pumps and stopped the drilling of new bore wells.

Industrialisation and water diversion

The Borai Industrial Growth Centre on the banks of the Sheonath was set up in 1989. Since the Sheonath is not a perennial river, the government of then Madhya Pradesh had committed to supply additional water to the industrial units. To store water for further use, it was necessary to build a barrage across the river. Owing to the paucity of funds, the project was put off. But the pressure by the industrial units continued. The largest consumer, Hindustan Electro Graphite (HEG), was even prepared to build the barrage and the water supply for its sponge iron plant itself. But the Development Corporation, set up by the government to promote investments, preferred RWL, even though the conditions offered were much less favourable. The procedures with which the government officials and RWL negotiated the contract contradicted normal rules and regulations, and raised suspicions about corruption.

The deal was part of an attempt by the government to push industrialisation forward. Chhattisgarh region, which became a separate state in 2000, is rich in natural resources.

The deal was part of an attempt by the government to push industrialisation forward. Chhattisgarh region, which became a separate state in 2000, is rich in natural resources. At the same time, Chhattisgarh is home to a majority of indigenous peoples whose ancient traditions of livelihood production are based on natural resources like forests, land and water. These are now threatened by industrialisation, with land grabbing, mining and the exploitation of water and minerals being the major features of development. There are huge deposits of tin ore, iron ore, coal and bauxite in the region, to name just a few. There are several power plants and hydel projects, the huge industrial complex of the Bhilai steel plant with numerous ancillary industries, the BALCO aluminium plant and iron ore production units. With an annual rainfall of 1,200 mm, water resources are abundant. Some years ago the UK-based consulting company Pricewaterhouse-Coopers prepared a *Chhattisgarh Vision 2010* document in which it highlighted the water resource as one of the positive preconditions for new industries and recommended to create more incentives for attracting private investment.

While according to the National Water Policy, water is legally under the stewardship, regulation and control of the State, in reality it is privately appropriated by landowners and by industry. In fact, industries have been supplied water from irrigation projects for several decades. With new industrial projects on the rise and government investment in dams cut or slowed down, governments began increasing the allocations from existing irrigation projects – like in the case of Hirakud project in Orissa – to encourage industries and to meet their demands. The diversion of water to industries and cities and the pollution of resources are going on almost unchecked. The steel manufacturer *Jindal*, for example, diverts water for its sponge iron plant; the companies *Bhilai* and ESSAR, use huge amounts of water from the Savri River to pump and flush iron ore in enormous pipelines, used as an inland water way, for its steel plant in Vishakhapatnam located more than 400 kilometres away on the coast. Most of them have secured their own water resources and infrastructure like dams and reservoirs.

The diversion of water to industries and cities and the pollution of resources are going on almost unchecked.

The agreement with RWL went one step further. It was the first so- called "public-private partnership" for supply of water to industries. It is a classical example for the strategy promoted by the World Bank and others to shed public responsibilities under the excuse of public poverty and mismanagement, claiming that the private sector would be more efficient. This is not restricted to the water sector but relevant for other public services as well. But it turned out that the government was at the receiving end in this "partnership" – a take-or-pay clause guarantees a payment to RWL for 4 million litres per day even if there is less demand. The company took over the existing water infrastructure and land for their new office building almost for free. And the agreement made the public Development Corporation a virtual agent, if not a hostage, of the private company. It was made responsible for securing permissions for building the anicut; it had to guarantee that the company would be able to lift the amount of water

required even in the summer months, meaning that public water had to be supplied additionally if the demand could not be met by the private company. And it was also made responsible to collect water use charges from consumers in the industrial estate and ensure regular payment to the company.

Public vs private

As soon as the first articles about the first river privatisation in India (including the pictures showing Kailash Soni enjoying his boat trip) appeared in the Indian media, a wave of strong protests swept the nation and campaigns was launched in support of the local struggles, bringing together trade unions, activists, social workers and parties from the left. Activists from the National Alliance of People's Movements, the All India Youth Federation, the Nadi Ghati Sangharsha Samiti and the Chhattisgarh Mukti Morcha have been uniting people living along the river, with people from several villages joining the struggle. "Commons can't be sold," says Gautam Bandhopadhyay from the local NGO Nadi Ghati Morcha, which had a coordinating role during the campaigns. Celebrities like Medha Patkar, the leader of the struggle against the dams on the Narmada River, visited the area.

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So far, the privatisation of water has had mainly to do with the relinquishing of urban water supplies to global private companies like Suez, Vivendi or Thames Water. Critics of privatisation repeatedly point out that instead of solving the problem of insufficient access to water, especially for the poor, the private-public partnerships just relieve the public water supply corporations from their responsibility to provide water to all citizens, making the water supply dependent on the profit motive. Private companies would rip off the State and put profit before people and the environment. Cases like the water privatisation in Manila, the capital of the Philippines, or in the Bolivian city of

Cochabamba proved that these fears were very real. The case of the Sheonath River is even more fundamental, insofar as not only the infrastructure and the management for the supply of drinking water was privatised but the resource itself as well, for the benefit of the industry. So it quickly became a symbol for all the problems of privatisation and an important reference point for the anti-privatisation movement, which extensively highlighted the flawed conditions of the agreement.

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Furthermore, like in the various struggles against Coca-Cola and other bottling plants as in Plachimada, Kala Dera, Gangaikondan and Sivagangai, the resistance was fuelled by the obvious injustice that industry demands were given priority over the needs of those who used the water locally, such as the farmers, vegetable growers, cattle holders, fishermen, *dhobis* and women. The lease highlighted the mounting conflict between the rights of the people along the river, dependent on access to water for their basic needs and livelihoods, and the contract-based right of the company claiming superior rights to the water, between subsistence livelihood production and industrial development – excluding others with weaker rights and weaker political voice.

Secondly, the agreement raised an important question: Why should a public utility give up its responsibility to a private company – at very favourable terms for the private partner? Existing infrastructure and public lands were handed over to the company almost for free. The take-or-pay arrangement raised many eyebrows because it obliged the government – as the intermediate supplier to the industrial estate – to pay RWL even for water which was not needed. This amounted to risk-management for the private company at the cost of the public exchequer. It has been estimated that the losses to the State amounted to Rs.1.29 crore between December 2000 and June 2002 alone. There has been no feasibility study nor any consultation with the traditional users.

Successful resistance

The struggle was quite successful. In the face of the widespread opposition, highlighting the dubious practices in favour of private profit from such an important vital resource, the then Chief Minister Ajit Jogi announced in April 2003 that the agreement should be cancelled. A Public Account Committee (PAC) was set up by the State Assembly to look into the affair and make recommendations. In May 2003 jubilant headlines read "Private river returns to public". The protests and public debates had made it very clear that the privatisation deal not only violated government rules and regulations but also contradicted the duty of the State to make careful use of public resources – as the custodian of the people. And it became evident that privatisation by companies like RWL can only succeed where a compliant State offers them the luxuries of monopoly, minimum purchase guarantees, and other incentives.

A Public Account Committee (PAC) was set up by the State Assembly to look into the affair and make recommendations. In May 2003 jubilant headlines read "Private river returns to public".

There was also some relief for the villagers. Recognizing the rights of the water-dependent communities along the river, the government built further anicuts to increase the water level which is also helps the recharge of groundwater and wells. So at least the farmers from the villages on the banks of the Sheonath were able to reclaim their right to water to some extent. Farmers in Belaudi, for example, admit that water supply is not a real problem for them anymore. But fishermen, many of them Adivasi, were left out because fish no longer migrate up the river due to the series of anicuts. Thus, the movement split up to some extent, weakening the mobilization. According to Gautam Bandhopadhyay from Nadi Ghati Morcha (NGM), a "hidden agenda" on part of the government can be seen in its giving in and building the anicuts.

More struggles ahead

Satisfied with the announcement of the intention to cancel the agreement and the relief brought by the additional anicuts, the

opposition calmed down – and so did the political class. The RWL was allowed to continue with its operations until the PAC submitted its recommendations. But the PAC report was not released for several years. Only after protests about this delay flared up repeatedly was it finally made public on March 16, 2007. It was a devastating account of what went wrong with the agreement and recommended that the flawed deal "must be cancelled within a week". According to the report, criminal proceedings should be initiated against government officials involved in the deal for "conspiracy" to the disadvantage of the State through manipulation and forgery of documents. And the report recommended that a case be filed against the CEO of RWL for participation in this criminal conspiracy and gaining profit by causing harm to government properties.[8]

It was a devastating account of what went wrong with the agreement and recommended that the flawed deal "must be cancelled within a week".

The findings and recommendations of the Public Accounts Committee confirm the public responsibility for management and allocation of water resources. They clearly pave the way for reclaiming public responsibility for the delivery of water, thus earning "public profit" with water access for all people instead of private profit by supplying resources to a few. The inclusiveness of public supply is a major argument for public services, particularly in a country where a majority of the population is poor. So, the struggle against the privatisation of the Sheonath River can be understood as a contribution to retaining or reclaiming the public management and allocation of water resources as a precondition for democratic control over water and other natural resources. Even if water supply to the industry by the government does not automatically respect local needs and demands – the case of the Palar River being an example of such violation by the government itself – it opens up the option to revive a social contract between the citizens and the State aimed at the planned development of

[8] SANDRP: *Dams, Rivers & People, Call for Immediate Cancellation of Sheonath Privatise Water Supply Project & Initiation of Criminal Proceedings against Responsible Officials,* April 2007

water resources in a socially and environmentally sustainable manner for the benefit of all citizens, instead of a market contract for private resource exploitation.

But still, the story is not yet over. Now legal questions and fears of compensation, which could cost the state up to 400 crore Rupees, are delaying the implementation of the recommendations. So government continues to pay for water that is not needed, and *Radius Water Ltd.* pulls a profit for services it does not render. Again protest rallies, petitions and court cases have started, this time to press for the implementation of the PAC recommendations.

Furthermore, while successful in publishing the damages by privatisation in the case of Sheonath, the struggle could not put a brake on privatisation in the water sector altogether. In Bangalore, the capital of Karnataka, a five-star hotel has entered into contract with the municipality under the private-public partnership model for control over a 150-acre tank critical to the water security of the city. More bottling plants of both national and multinational soft drink companies are coming up, cornering prime groundwater almost for nothing, depriving rural communities of sufficient clean drinking water and of water for irrigation. Like with the Hirakud Dam, the government policies, in place since industrialization to divert water from agriculture and other rural livelihoods to industries are considered to be the magic path to growth, modernisation and global competitiveness.

Again protest rallies, petitions and court cases have started, this time to press for the implementation of the PAC recommendations.

Also, the victory in Sivagangai was locally confined. Coca-Cola decided to shift the plant to the SIPCOT industrial park in Gangaikondan further south near the city of Tirunelveli. The private company, South India Bottling, serving as a co-packer for Coca-Cola, got the production licence for a unit inside the economic zone which is supplied with water from the Thamiraparani River through huge land pipes.

PACT again alerted the people there. Many villagers and members of the panchayat, who initially welcomed the industrial estate and the unit, changed their mind after they had been taken on a visit to Plachimada. However, although 40 NGOs formed a Joint Action Committee for Conservation of Thamiraparani and Groundwater (JACCTG), demanding that the licence for the plant be cancelled and the water instead be given to the farmers, the resistance collapsed in 2005 and the company started bottling juices for Coca-Cola in Gangaikondan.

Most farmers in the area get their irrigation water from a government-operated dam further upstream. Their concern was more over the diversion of that water to industry by the public authorities managing the dam, leaving many of them without irrigation.

One reason for the defeat of the struggle was the fact that no shortage of groundwater was felt in this area. Another reason was that in Gangaikondan the majority of local people are Dalits. Often unorganised, and with even less voice than the farmers in Sivagangai, many of them actually welcomed industrialisation because they hoped for employment irrespective of caste, and for respect, which they would never get in the traditional agricultural system. Furthermore, most farmers in the area get their irrigation water from a government-operated dam further upstream. Their concern was more over the diversion of that water to industry by the public authorities managing the dam, leaving many of them without irrigation. Only those people closer to the river were up in arms over the threat to their water supply posed by the new pump houses and huge pipes taking the water to SIPCOT and the Coca-Cola plant. Because of such different interests, it was not possible to root the struggle against Coca-Cola in the wider local community.

Unlike the situation in Plachimada, where several studies were able to confirm the disastrous impacts of Coca-Cola's over-exploitation of groundwater, and unlike the case of the Sheonath River, with the diversion of water, the high handedness of the Radius Water Ltd. management and staff, and the dubious public-private partnership agreement, the situation in Gangaikondan was less clear cut. While it was possible to forge a broad opposition against

the multinational company, the opposition against the SIPCOT industrial park itself, responsible for drawing water and depleting the groundwater as well, was divided.

Building up resistance and exerting pressure on a powerful MNC like Coca-Cola is an important action of power politics, and loaded with the symbolic policies of David against Goliath. Even from setbacks like in Gangaikondan, people can learn and know about the powers that be. However, the cases also show that in the context of the caste system as a discriminatory social system of access and exclusion, it is quite critical which resources can be defined as "common" and how people can be mobilised for "common" interests. Obviously, it is necessary to have a thorough social and political analysis of various interests and needs, as well as a documentation of different positions in order to take up the right strategies and activities. And it is a risk to reduce the necessary campaign for the right to water to a more superficial agitation against a single enemy like a MNC, while at the same time Indian corporations or public water departments are doing very much the same, i.e. depriving people of their right to water.

2.3 Less is more – Sharing and social regulation

Nallani Adinarayana is a powerful person in Madirepalli, a village 25 km from Anantapur with some 700 inhabitants. As *Neeruganti* he has the responsibility of regulating water to the different fields of the *Gonchi* (meaning 'collective'), the traditional irrigation system of the village. Stream water or in the dry season seepage water from a natural stream, *Akuledu vanka*, is diverted through a canal and used equally by different landowners. The canal is community property, the paddy fields are private. The *Gonchi*, covers 50 acres owned by 40 families. For eight years Nallani Adinarayana has been the *Gonchi* head. An important part of his duties and powers is to monitor the equal distribution of water through the system

Stream water or in the dry season seepage water from a natural stream, Akuledu vanka, is diverted through a canal and used equally by different landowners.

Nallani Adinarayana, Madirepalli, Neeruganti of the Gonchi

by sophisticated instruments called '*antham*', wooden planks with metal markers which allow only a specified amount of water for each plot – six fingers for one acre. Thanks to the *Gonchi*, the average paddy yield has consistently been between 18 to 25 quintals, in a few cases the yield peaked at 33 quintals. Having worked well for more than a century, there are collective efforts towards maintenance, usage and management. Norms and regulations are in place that are followed by all. One such rule is "no vulgar language [is] to be used during the meetings". Another requires one to contribute labour towards de-silting and repairing the channel, which is necessary almost every year. Those who shirk their duties or attempt to cheat on his share of water are punished, normally with a fine. The money is used for the *Gonchi* celebration with ham and music, involving the whole village. "Shared water, shared meat," says Nallani Adinarayana.

Women harvesting groundnuts

More yield per well

While community management and water sharing is quite common in surface irrigation schemes, it doesn't normally take place in groundwater irrigation. It is widely accepted that the landowner has the right to use all the water which he can access by wells. Like in many other parts of the country, farmers in Madirepalli installed pumps on bore wells for additional irrigation. Within less than two decades the number of bore wells and pumps jumped from just a handful to almost 140. Free electricity made it cheap to pump out as much as one could get. Groundwater level went down. First the open wells and percolation wells went dry and then the bore wells. Desperately bringing down new bores, at a cost of Rs. 12,000 each (which is equal to the annual wage of a labourer) didn't help much because they often failed. Farmers were left with debts instead of water. The high number of suicides among Andhra Pradesh's farmers has been attributed to the debt trap caused by water stress and failing investments in pumps.

Within less than two decades the number of bore wells and pumps jumped from just a handful to almost 140. Free electricity made it cheap to pump out as much as one could get. Groundwater level went down.

Anantapur district in southern Andhra Pradesh has the second lowest rainfall in the country at a mere 550 mm per year. Yet water guzzling crops like paddy, sugarcane and coconut are still grown by many farmers through bore well and tank irrigation. This has replaced the traditional dry land cropping pattern with crops like millet and sorghum. Madirepalli and the surrounding region is famous for its groundnut seeds of reliable good quality. Traders come from Tamil Nadu and other faraway places to buy. Everywhere you see bullock carts on their way to the village loaded with groundnut. Women labourers pick up the remaining nuts from the field. Proudly, the farmers present the huge heaps of yellow groundnuts inside their farm yards. This year has been a bumper harvest, not only due to good rains but also because of the community water management.

On the wall of the meeting place is painted a huge village resource map which highlights the hydrological features of the area. Farmer

Narayanswami is showing Akuledu Vanka, the natural stream which supplies the *Gonchi* with water during the June to September monsoon. Apart from it, there is an irrigation canal which passes by within just a short distance of the village. Situated at the tail-end of the canal, no water reaches Madirepalli. Petitions and complaints to the authorities demanding their share had been in vain. So they stopped paying the authorities for a canal that is useless and for water they don't get. Since there is no old tank system like in other parts of southern Andhra Pradesh, the farmers depend on rainfall and their bore wells. And the map is covered with dots indicating functioning and non-functioning wells.

Some time ago when in Madirepalli more and more new drillings failed and most of the old bore wells were dry, field workers from Rural Integrated Development Society (RIDS), the local NGO, brought up the idea of sharing water from existing wells with

Area map of Madirapalli

neighbouring farmers instead of the endless attempts to find their own sources of water. Perhaps it was the tradition and experience of sharing water in the *Gonchi* system which helped to convince the farmers. Still, giving water from your own well to your neighbour without compensation in cash or in kind is a rather unusual way of water management, especially in a modern world where everything is getting its price tag. "It took long hours of discussion," Kistappa from RIDS recalls, to raise the awareness that in the end, everybody will be left without water if the competitive approach is allowed to continue. First only a few started. But now, nearly everybody in the village participates.

Still, giving water from your own well to your neighbour without compensation in cash or in kind is a rather unusual way of water management, especially in a modern world where everything is getting its price tag.

Siva Reddy shares the water from his well with his neighbour Pedda Obulesu, whose well has been dry for several years. Obulesu pays Rs. 600 per year to the bore well owner as a contribution to maintenance and repairs but nothing for the water he receives. They also share the sprinkler system, which helped to convince the farmers and made the biblical wonder possible of sharing water with your neighbour while still having enough water for yourself. Micro-irrigation makes it possible to get the same or even higher yields with less water. The farmers' own contribution for the equipment is just 20 per cent of the cost of Rs. 18,000, another 20 per cent is covered by the NGO, while the major amount is given by the government, which also provides the sprinklers and the pipes.

Everybody happy? It seems so. Distress migration has decreased and livestock population has increased. Now they can irrigate up to three times more land than before. There is a harvest even in the dry season, not to speak this year's bumper harvest thanks to very good rains. Still, they would be glad if the canal would bring additional water allowing irrigation for all their lands. That would save the groundwater reserves.

Top-down approach

The groundwater crisis in Madirepalli was neither an exception nor an isolated fate. All over India groundwater sources are rapidly being depleted, threatening agricultural development, food security and livelihoods of millions of farmers. For many years this silent crisis of the invisible underground aquifers has been neglected and ignored. But in the meantime it can't be ignored any more, less so because of the overall water crisis hitting India. It has become necessary to develop new methods and rules for allocation, entitlements and access issues. Logically, agriculture as the main water user with a

Box: Groundwater crisis in India

Groundwater is the main source of water throughout India and is used for all purposes. Around 80 to 90 per cent of rural drinking water needs are met by groundwater, and groundwater serves around half of India's net irrigated areas.

Groundwater extraction has risen exponentially since the 1950s due to various reasons such as the introduction of Green Revolution technologies, i.e. production packages of seeds, fertilizers and pesticides which need sufficient water to bring high yields. Because management of irrigation systems often was unreliable, farmers invested in pumps promoted by subsidies for irrigation pump sets. Bore wells and pumps also allowed the expansion of agriculture in rain-fed areas, additionally fuelled by profitable cash crops and recently by agro-fuels to recover investments in equipment. Unlike traditional crop varieties such as millets, modern market crops like rice, sugarcane, cotton, wheat, or maize are often water guzzling types. There has been a general shift from surface water to groundwater for irrigation, from 38 per cent of the irrigated area in 1970 to 54 per cent in 1995. India's 100 million farmers have 19 million tube wells and pumps.

Farmers hardly had to pay any fees or charges for the infrastructure used to deliver the water in irrigation schemes. They paid even less for using groundwater. And there is no understanding of the limitations of the resources. As a result, in rain-fed areas like Andhra Pradesh as well as in the heartlands of the Green Revolution such as Punjab and Haryana extraction exceeds natural recharge and the groundwater levels are falling dramatically. There is a strong link between land and water, giving the landowner almost unlimited rights over the use of the groundwater and increasing economic and social inequalities even further.

share of up to 90 per cent of water used, came into focus of national and international water policies. Governments, researchers, development institutions and civil society organisations are all involved in a heated debate about how the water demand could be regulated instead of increasing the supply by costly means like bore wells, dams and irrigation channels. Instead of development of water resources, the catchwords now are demand-side management, integrated water resources management, water efficiency or "more crops per drop".

New water laws, institutional reforms, integrated planning approaches and new institutions have come up with the common goal to make allocation and use of water more rational and efficient. In irrigation schemes, water user associations get more responsibilities while the government authorities are gradually withdrawing, opening up spaces for non-governmental actors, be it profit-oriented private investors, or community-based water user associations as service providers. Many new attempts in water management, promoted for example by the World Bank and taken up by several governments, put the emphasis on pricing, water rights reforms, cost recovery, high value uses and market-oriented solutions. One of the centrepieces of these policies is the increase in the cost for water supply. Take irrigation schemes, for example: the government recovers 50 to 60 per cent of the cost through water fees., This is built upon the expectation that higher costs force the issue of efficiency in water management, help convince farmers to invest in drip irrigation and even encourage them to shift from low value water-intense crops to high value crops such as horticulture, which need less water.

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In the attempt to regulate groundwater use – which is even more difficult to tackle than other water crises – the AP government formulated APWALTA, the Andhra Pradesh Water, Land and Trees Act of 2002 which prohibits new bore wells within 250 metres of existing ones. But since there is no restriction on water extraction,

it hardly helps to reduce water mining. It is even "depriving poor farmers of water in the name of water rights," criticizes Rama Mohan from CWS because they are not allowed to have new wells in the neighbourhood of rich farmers. "The law itself is denying water rights." The role of the people in local regulations and governance is completely missing in such top-down control and regulating approaches, even though there have been some successes in groundwater governance by communities.

Reclaiming the groundwater

Madirepalli is one such success. And it is very different from the regulatory approach of APWALTA and from the market-based approach which treats water as a commodity and regulates access and allocation based on mechanisms of price and supply and demand. "At CWS we believe local people could come together, discuss the problems, and plan strategies to manage both conservation and utilization of water," explains Rama Mohan. "If you create a favourable atmosphere the farmers will

Bumper harvest

control themselves." Community controlled regulation of water by community-based organisations (CBOs) could be the way out, allowing for solutions which would take care of the rights of different users regardless of their political, economic or financial power. According to the philosophy of CWS, the bottom line for this approach is the understanding of water as a common property, not as a private good that can be monopolized and used at will by a few farmers.

For this, the village community agreed upon a set of rules and regulations in order to avoid the mistakes of the past. The most important one is the ban on new bore wells. Secondly, "thirsty" water-guzzling plants like rice and sugarcane must be phased out. So far, cropping patterns were not based on water availability. Most farmers still have paddy fields in the *Gonchi* for rice. Further, there is a ceiling on the extent of irrigation, which is lower in *rabi* than in *kharif* season.

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This whole set up of "social regulation" has to be supported through training in water management improvements, dry land and rain-fed farming, improved rice cultivation in the *Gonchi*, crop diversification like vegetables and chillies instead of rice, seed production and seed storage, composting and the use of bio pesticides, new seed varieties and farming methods. Essential are also additional methods to improve the availability of surface water and to recharge the groundwater through physical works such as the construction of ponds, bunds across *nallas,* i.e. erosion gullies, and land slopes. Landed farmers reap most of the immediate benefits, but the landless population also benefits from increased labour opportunities. The new instrument of the National Rural Employment Act (NREGA) opens up new opportunities for funding such water infrastructures as the rehabilitation of tanks, rain water harvesting structures and watershed development, which will also help increase groundwater levels. Interventions such as promoting dry land horticulture among scheduled castes and new *dhobi ghats*

Box: Pani Panchayat

Except for a few isolated examples of farmers' participation through cooperatives, ownership, control and management of irrigation systems has been in the hands of governments. The thrust to Participatory Irrigation Management (PIM) came from the National Water Policy, supported by many international donors like the World Bank, European Commission and USAID. PIM has been conceived as the thrust area in the effective irrigation management through the participation of farmers in the operation and maintenance of irrigation systems. The creation of *Pani Panchayats* or Water User Associations (WUA) has been seen as an instrument to enhance the role of farmers in irrigation management and to improve performance in the irrigation sector.

Studies of their performance show mixed results. In areas where PIM is implemented, average recovery rates have – according to CWS – successfully increased 70 to 80 per cent. Investing water fees back into the WUAs for costs of organisation, maintenance and administration could help improve the services. Besides an improved water tax collection, the formation of *Pani Panchayats* offered innovative aspects such as the transfer of legal rights, creation of an asset base such as tractors or threshers used by the PP members, or the involvement of women. One of the interesting experiences is the all-female PP in Aunli project, one of Orissa's pilot projects with strong financial and institutional inputs and some direct involvement of the World Bank in the formation of Water User Groups. In the all-female *Pani Panchayat*, the first of its kind in the state, the women not only effectively manage the system but represent the PP in the Apex Committee set up at the project level. They are functioning at par with other male-dominated PPs and even show better decision-making skills.

Based on examples like these, NGOs pin some hopes on the new institutions. People must succeed in overcoming the attempts by the dominant power groups within the villages to defeat the *Pani Panchayats*. In Aunli for example, the charismatic landlord, who was very instrumental in the formation of the *Pani Panchayats* and who had been informally selected to preside over the body two terms in a row, was finally put through a proper election process as president of the water user association. Still NGOs like CWS are also aware that despite considerable effort and input, initiatives within WUAs to attain sustainability are often lacking. Projects focus on developing the physical rehabilitation of infrastructures but not enough on mobilizing the community mobilization and strengthening the *Pani Panchayats*. Their role has been limited to fixing and collecting water service fees, minor maintenance work, etc. Another major area of concern is the non-involvement of women, the landless, sharecroppers and other user groups. Most groups therefore have not yet progressed towards attaining self-sustainability, neither institutionally nor financially, disabled often by inadequate facilitation and capacity building inputs.

Rama Mohan (CWS): Review of Pani Panchayat Act of Orissa, unpublished report 2008, March

for the washermen communities with guaranteed water supply from community wells would benefit other communities as well.

Together with sufficient rains after a prolonged dry spell, these measures have helped the recharge of groundwater. Open wells are full, groundwater levels have increased and dry bore wells have come back to life again. Water budgets calculated for the last two years show a decline of overuse down to a break even point of recharge and off-take. But CWS would like to bring the off-take down to a safe water budget of 70 per cent.

It still remains important to check the water situation continuously. Like in the villages along the Palar River in Tamil Nadu (see section above '**The Palar River is everywhere')**, Madirepalli also has participatory hydrological monitoring, with local volunteers collecting data, documenting the data on blackboards and discussed in the *Sanghas*, the group meetings. Hard facts and figures create awareness about resource availability and appropriate use. Water balances are calculated by using a newly developed, easy to use software and the groundwater situation is discussed and crops are being planned accordingly. All this must be sober and convincing because interfering with a farmer's decision about what to grow is as equally unusual and difficult as the idea of sharing water. "This needs a lot of discussion," the farmers admit. Networks like the Water and Democracy programme encourage the knowledge exchange, to lead the debate on policies and conduct capacity building on new tools, so that more villages can benefit from new ideas and methods.

Open wells are full, groundwater levels have increased and dry bore wells have come back to life again.

In the next village the farmers would like to take up water sharing, sprinklers, conservation measures and the whole system of social regulation. But the panchayat has no funds, insists the *Sarpanch*. The impressive old safe in his office belongs to the *math*, the village temple, not to the Panchayat, he smiles. And there's not much money in it either. So he hopes that RIDS will come in support of a similar programme.

2.4 Hydraulic infrastructure – The people's way

In spite of huge investments in dams, hydro power and irrigation, the World Bank considers India backward when it comes to utilising water for development. While countries like South Africa, Mexico or Morocco store about 1000 cubic meters per capita, India's dams can store only 200 cubic meters per person and just about 30 days of rainfall. So in the words of the World Bank there is not enough "water security", meaning a reliable supply of water for agriculture, of electricity for households and industries, and not enough protection against floods and droughts. A few years ago, the World Bank and the Asian Development Bank which had stopped funding mega dams in the 1980s because of the strong criticism against them, rediscovered multipurpose hydraulic infrastructure as a precondition for development. According to both the World Bank and the Indian government, it would bring "high benefits" while the "high risks" like social and environmental damages could be handled with proper environment assessment and mitigation measures. Since then there are many new projects in the pipeline, some supported by World Bank and with huge loans from other multinational financial institutions.

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This new found love for big infrastructure contradicts the experiences of the last decades. In spite of crores of rupees invested into centralized infrastructure, thinking big and neglecting decentralized low cost solutions for the villages, the promises were often belied. The huge investments also did not bring much return to the State, thus contributing to debt, cuts in public spending and attempts to privatise public services like water supply. Take the example of irrigation: In twelve years from 1991/92 to 2003/04, the latest year for which figures are available, there has been absolutely no addition to net irrigated areas by canals, as Himanshu Thakkar from the South Asia Network on Dams, Rivers & People (SANDRP) reports, based on actual field data from states.[9] So the Rs. 99,610 crores spent on major and medium

irrigation projects over the course of these twelve years have not improved the overall situation at all. Maintenance of the existing irrigation infrastructure, as estimated in the World Bank's 2005 report "India's Water Economy: Bracing for a Turbulent Future" equals Rs. 17,000 crores annually. But less than 10 per cent of that amount is available. One of the reasons are high subsidies, another is the large numbers of unauthorised domestic and irrigation connections. Governments failed to get rid of them due to political reasons.

The benefits of the huge public investments by the State went mostly to the better off sections of society – to companies, to farmers with land and capital, and to the urban consumers. They did not even pay a fraction of the costs which the mega projects caused in financial, human, social and environmental terms. "They don't think about how their energy is produced, less they care about it," grumbles William Stanley, Director of IRDWSI, a development organisation working in Orissa. As long as they get their electricity, they are not interested in what is happening beyond their power plug.

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The burden fell mainly on the poor. And the negative impacts concentrated in the tribal belt, the region in Central India from West Bengal and Orissa in the East through Chhattisgarh and Jharkhand up to Madhya Pradesh and Maharashtra. Rich in natural resources like bauxite, coal, water and iron ore, this region became the engine for India's industrial development – but the people, especially the Adivasi population living here for centuries, were impoverished. There are numerous examples how the "temples of modern India" like Hirakud or Tungabhadra have pushed hundreds of thousands of lives deeper into misery. Displacement, often without compensation, uprooting, loss of culture and social

[9] Press Release October 5, 2007: "Rs 100 000 crores spent, but no additional benefits"; www.sandrp.in

cohesion – you name it. In Orissa's Koraput district alone, four mega hydro projects generating 1000 MW have been responsible for displacing approximately 250,000 people over the last decades, mostly Adivasis, who have lost their traditional ways of living in the process.

Small tanks and dams against drought

The various Adivasi communities in Paikmal Area of Orissa's Bargarh district – Kondh, Gond, Binjhal and Sahara being the dominant tribes – literally live with their backs to the wall at the foot of the steep, wooded hills of the Gandhamardhan hill ranges. The forests on the hills are rich in biodiversity and of high cultural and religious significance for the Adivasi. Here you hardly see any trace of the rapid industrialisation which is taking place in other parts of Orissa. Electricity has not yet reached the small and scattered villages. Just a mud road stretches between the villages. The tiny fields have marginal soils, the small houses are still made of brick and mud, there are hardly any bullock carts (not to mention tractors) and there are just one or two small village shops. Many of the villagers leave in the off-season in search of daily labour elsewhere. Besides agriculture they collect minor forest produce like wild oranges, custard apples and flowers from the *mahua* tree, which are used to produce an alcoholic drink, selling their finds to middlemen. The life they lead is hard with little income and plenty of exploitation.

The tiny fields have marginal soils, the small houses are still made of brick and mud, there are hardly any bullock carts (not to mention tractors) and there are just one or two small village shops.

Once upon a time these central Indian areas used to be agriculturally prosperous, receiving high rainfall during the monsoon season. The communities' infrastructural backbone and nerve centres for sustenance and livelihood consisted of an elaborate system of traditional water harvesting structures like *Mudas, Katas, Chahalas, Bandhs* and *Chuas*, different kinds of tanks connected by canals and a sophisticated protection system against droughts during the long dry seasons. In this western region of Orissa, almost every village

had such a network of tanks, appropriate for retaining surface water for different uses. Many of them are very old, initially built by indigenous expert tank diggers, *Kultas*, who had migrated to the area in the latter half of the eighteenth century, bringing with them a unique tank building technique. In Orissa alone, there are about 28,000 tanks; 3,600 of them are considered relatively large having a command area of more than 40 hectares. There were smaller tanks for drinking water, washing and bathing, mainly with mud or earthen walls, square and hardly larger than 30 by 30 meters. Most of them have a small temple sitting on the bund at one corner or sometimes in the middle of the pond. Some look like small replicas of a Hindu temple, others contain some Adivasi sacred objects. Tanks are also inextricably linked to the socio-cultural aspect of rural life and have historically been an indispensable part of the village habitat, sustaining its socio-ecological balance.

The construction of the larger tanks was often initiated by royals

Adivasi village near Putsil

Tank in Paikmal Area in Bargarh District in Orissa

or landlords or temple administrators, but most tanks were built and managed by the local communities as common property resource. Protecting the structures through forest conservation in the catchment area was part of the social system, too. There is evidence that until the 1950s people were able to irrigate large parts of cultivated land with this elaborate system. But after independence, traditional practices were no longer appreciated, and traditional social institutions of water management were not acknowledged as organisations of village communities. With the shift of responsibilities to the government, the maintenance was often neglected and social institutions of water management eroded, leaving those people dependent on community infrastructures and without other means to cope high and dry. With the Green Revolution, attention shifted to large and modern irrigation projects, to bore wells and power pumps. Since tanks and water distribution systems have been neglected, irrigated area went down. Rapid deforestation increased floods, soil erosion and loss of access to minor forest produce. Dry spells became droughts, further burdening the people and causing the loss of their livelihoods, driving them further into the background, into dependence on forest produce, casual labour, and unproductive agriculture.

Less costs, no risks, high benefits

But the villagers from Mithapali and Bartunda Gram Panchayats decided to take their fate into their own hands. The tank for bathing, washing and drinking water, which according to the present owner had been built at least three generations

ago, had been silted and dried up within a few months after the monsoon. The earthen walls are still strong and solid and there is a small temple in one corner. Although it belongs to the farmer who owns the surrounding fields, the villagers agreed to come together to de-silt the tank and to reduce the dependency on the tube wells for water. Every family cleared a 10 by 10 foot patch. In exchange, they are now allowed to use the tank for bathing and washing clothes while the owner uses the water for a small vegetable garden next to the tank. School children and the owner planted trees and a variety of fruits and vegetables on the tank bunds, turning them into a jungle of wild tomatoes, indigenous plants, grass and bushes.

The villagers also started to improve the irrigation for their small plots of land. They built small earthen dams to collect water for recharging the groundwater and watering some of the fields below the structures. They cleared sand, stones and old wood from the old small canals distributing water to the plots. Using the monsoon

Box: "Holding the key to the water"

Kannapan, Ellamma, Meenakshi and the other members of the farmers association in Ullavoor talk at the same time because all of them want to tell the story how they revitalized the canal that brings water to their tank. It was built a long time ago starting at a reservoir and supplying water to 17 villages. There are various renditions on how Ullavoor, the village at the tail end of the canal, got the responsibility for the key that opens the sluices at the reservoir. "We hold the key to supply all the villages up the canal," they say proudly. So every year in the dry season a delegation from the village used to travel up the canal to open the sluice in a big ceremony. For more than 15 years, however, the canal has been blocked by silt and weeds. The water no longer water reaches the villages. Farmers sold their farms and migrated, and the Dalits of the village took over some of the land. Needing water for irrigation, they proceeded to convince everybody, including non-Dalits, to join in an organised effort to clean the canal. Those who could not participate in the manual work contributed buttermilk and soft drinks. Their initiative inspired people from other villages who also started to clean the waterway. The "keyholders" from Ullavoor will soon travel up the canal again with drums and songs, says Kannappan, who is a good drummer and a song writer too, and open the sluice again.

rains and the water coming down from the Gandhamardhan range to flood their fields they can build upon a long tradition in rain-fed rice cultivation. The sharing of water amongst the farmers follows a number of simple rules, they explain. As long as there is water, everybody gets according to his or her needs, decided by the villagers. Some open wells allow a small vegetable garden which the owners irrigate with traditional water lifting systems.

They also they took up watershed development as their rice terraces and field bunds were regularly destroyed by the dozens of streams rushing down from the Gandhamardhana range during the monsoons from April to September. The earthen dams built to protect them were washed away, too. Not knowing what to do, they turned to Manav Adhikar Seva Samiti (MASS) for advice and

Water lifting from an open well and vegetable garden

financing. The women were the first to be convinced by the proposal to build gully plugs upstream. After being trained they collected stones and built small dams across the streams, successfully restraining the devastating flow of water and collecting silt at the same time, which can be used for the fields. After the women made the start the men followed. Over the course of the last two to three years they have constructed a dozen small barriers designed to reclaim the land and fields which have been destroyed and covered with sand in earlier floods.

Gully plugs and erosion control, the rehabilitation of structures like tanks, the protection of the forests from overgrazing and fuel-wood collection through the formation of village committees, collective actions for rainwater harvesting, and the introduction of drought resistant crops like dry-land rice have become promising ways not only to improve the environment but also to reduce the dependency on erratic rainfall. The activities also helped to revive community organisations. Encouraged by MASS communities took on other tasks such as improving agricultural practices, introducing eco-agriculture and switching to crops using less water ("adapting the plants to the water, not the water to the plants", as the villagers say.) These structures for collecting rainwater, recharging groundwater and protecting the fields from floods and siltation look much less impressive than the huge dams, large reservoirs, big canals and ambitious river linking projects promoted by governments with support from international finance institutions. But slowly the people developed their own system of "water security", i.e. a reliable supply of water for drinking and irrigation and protection from devastation by floods and erosion. All this through community action and minimal means.

Over the course of the last two to three years they have constructed a dozen small barriers designed to reclaim the land and fields which have been destroyed and covered with sand in earlier floods.

People as independent power producers

Hanak Tading is a barefoot engineer. Proudly, the young man explains his duties which he shares with two other men and two

young women trained to operate the power plant by IRDWSI. His night shift begins at 6 pm, when he starts the generator to supply electricity until 10 pm. He stays overnight to start the power supply again in the morning, beginning at 3 am and lasting until 6 am, so that the women have light to prepare the food for the day and complete other household chores before leaving for the field. The "village power Committee" is not only responsive to the needs of the villagers but also flexible. During weddings, child birth, serious illness, festivities and other such occasions power supply is provided because the village "barefoot" engineer can start the generator at any time.

Bodomanjari, the village where Hanak Tading lives, is at the end of a rugged road, its 30 kilometres taking a four wheel drive vehicle over two hours to travel. The typical Adivasi village with rows of low houses with tiled roofs, small verandas and old wooden doors is surrounded by scenic hills, their valleys and slopes covered with terraced paddy fields. The hills are capped with forests which have grown back ever since the villagers started protecting them from wood cutting and cattle grazing. All the villagers of Bodomanjari and neighbouring Phulpadar have gathered to present their new power station. The new power house for the two villages stands besides a small stream where water is flowing over big rocks. It

Meeting in a Dalit village in Paikmal Area (MASS)

Hanak Tading, barefoot engineer in Bodomanjari

must have been hard work in this narrow valley to carve out the small plateau for the building, the overflow and the pipes, and to carry down the building material and the heavy equipment on the small, slippery foot paths. The costs for building and equipment – nearly two million rupees all together – are neatly written on the wall, as well as the names of the financial donors. But the villagers' contribution of labour and local material, valued at 370,000 Rupees, was especially important and has created high identification with the project.

The model for them was the village of Putsil, a few kilometres up the road. The people of Putsil became independent power producers – IPPs – nearly a decade ago. Of course they are not what the World Bank understands by IPPs which is an euphemism for the privatization in the energy sector by handing over the profitable part, the power generation, to private investors. This kind of Public Private Partnership is often made risk-proof by guarantees or by take-or-pay arrangements like at Sheonath River and fixed prices for full cost recovery. But in Putsil, the energy

Village women at the power house in Bodomanjari

produced is not for sale or profit. It is for their own consumption – 60 W for each house. There are no overland power lines where they could feed the power into the grid.

The IPPs of Putsil are independent not because the government decided that they should have a free hand to make money from energy. Quite the contrary is true, in fact. It is because the government had forgotten them when it announced its scheme promising 100 percent electricity to Indian villages. They approached the Electricity Board several times, asking for connection and for the extension of the power line that ends 20 km away from their village. "It became hopeless to wait for the government," remembers Stanley. It is also important to note that several mega hydro-electric power projects were constructed in the region by the government only displacing thousands of people, hundreds of villages and submerging virgin forests. Putsil though a small initiative with zero social costs, no displacement, no submergence of forests stands an alternative to the centralized power projects managed by corporations. When the Orissa State Electricity Board (OSEB) was privatised a few years ago the people in the remote villages were hardly the preferred customers private owners wanted to capitalize on. "They have no heart," one of the women says about the private company. "But also there is no profit here for them," adds another. It became obvious that Corporate Social Responsibility does not reach into the interior regions of the Adivasi belt. So they had to act on their own, independently.

When the Orissa State Electricity Board (OSEB) was privatised a few years ago, the people in the remote villages were hardly the preferred customers private owners wanted to capitalize on.

The rest is already history. They mobilized "risk capital" from Indian and foreign NGOs, expertise from NGOs specialised in appropriate technology like ITDG from Sri Lanka, engaged engineers, hydro plant designers and land surveyors, and they put in their own skills, talents and labour. Their power station has been running smoothly for 18 years now, having only encountered minor problems during this time. The consumers are divided

into six groups and each group is assigned specific tasks such as repair and catchment area management. It has been profitable too – the money they have saved in kerosene is now spent on education. "Most of our kids are now in boarding schools," says Prembhai, the spokesman of the village. The village, which now has 96 households, has eight TVs or video sets and every house has light bulbs. In the electricity fund for repair and replacement there are one lakh rupees. They installed a rice mill in the village, making work for the women easier. No more backbreaking hours pounding and grinding cereals. Recently, the community has started pisciculture, using husk generated from the mill as fish feed. Plus the plant saves about 16 tons of carbon dioxide per year.

There are alternatives

Putsil, Bodomanjari, Phulpadar in Koraput and the Adivasi villages in Paikmal area in Orissa show that there are alternatives –

Meeting in Bodomanjari

decentralised, small-scale and managed by the people themselves. With zero submergence and zero displacement. With less funds. With more direct benefit for the people. In the last decades many villages like the ones in Mithapali and Bartunda Gram Panchayats have demonstrated that rainwater harvesting, afforestation and agriculture adjusted to the local climatic and soil conditions can bring back life to tanks, the environment and the rural economy. More recently, the reclaiming of defunct tank systems has been taken up by farmers groups (see box: "Holding the key to the water") and community organisations, an action which is supported by NGOs. They realized that this can be a viable, low cost alternative to waiting for the government to bring water by dams and canals. The examples of Putsil and Bodomanjari have inspired villages in other parts of Orissa, in neighbouring Andhra Pradesh and in Jharkhand.

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These alternatives have been so successful and convincing, that governments have also started taking them up. The Orissa government, for example, has decided to award plots of land to private companies for setting up mini and micro hydel power stations. There are numerous schemes and programmes for tank desilting, especially of large irrigation tanks, to support watershed development and rainwater harvesting. These are often co-funded by large international development organisations. Run by government institutions, they are often more expensive than projects organised by NGOs, as Chittaranjan from MASS reports. And sometimes they are outright failures. Some end up in the hands of corrupt construction companies and contractors. However, recognition and schemes set up by the government only work to further motivate the work of the communities and the supporting NGOs, and open up space and access to local authorities and funds. On the other hand, for the government this kind of cooperation has the advantage of handing over responsibility to communities and NGOs.

At the same time, mainstream development still continues along the old lines, which are more prestigious for government and more profitable for international funding institutions or private business. "No country has successfully met the water needs of its citizens with smaller dams," claims John Briscoe, the former World Bank water adviser who has been very influential on framing the Bank's new water policy. While groups with alternative ideas have to struggle for money, there is hardly any shortage of funds when it comes to tapping water resources for "development". The Indian government is planning new dams and hydroelectric schemes, mainly in the water-rich Northeast, promising that the social and environmental damages of the past will not be repeated. The government estimates that the country will need to install an additional 100,000 MW of generating capacity by 2012. The World Bank has offered to spend $550 million on new dams in 2005-2008. Expensive large-scale projects like river linking will need lots of funds as well, while neither the benefits nor the social and environmental costs have been evaluated yet.

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The logic behind this: Water has to fuel economic growth and internationally competitive development which boils down to industries, exports, private profitability, cost recovery of investments and hard currency earnings. A reliable and sufficient supply of water and electricity for this kind of development has become the main objective for most governments, public institutions and international development organisations. But looking at the past experience this implies that conflicts over distribution of water and funds, over development strategies and priorities, over water for livelihoods or for big money will continue.

Conclusions: Water for Livelihoods

On paper, water laws, rules and regulations could provide a rather sound framework for an efficient, equitable and environmentally-friendly water management. The provisions of the Constitution, court rulings, State water policies giving priority to drinking water, agriculture and environment – there is a lot to build upon. Additionally, the formal democratic set-up and the devolution of governance provide a political environment conducive to solving conflicts over water use and developing solutions for the protection of resources, supply and demand management, and allocation.

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In reality however, there is a significant implementation gap with regard to the universal right to water for all citizens. Governments and state institutions do not seem to be capable of handling the magnitude of the looming water crisis. Often the poor and weaker sections of society, which include small farmers, landless labourers, cattle holders, women and the Dalits and Adivasi, are at a loss in the power play that determines, in local governance institutions and district administrations, issues of access to and control over resources. At the same time, the economically better off and politically more influential interest groups can manage with or even benefit from the weakness of the state. With recent economic policies cutting back public responsibilities and in its stead promoting private-sector driven and export-oriented development, exclusions and conflicts will only continue to increase. At the Palar River the public resources are taken away for urban development, parts of the Sheonath River are being privatised in favour of industry, and in Orissa, Putsil and neighbouring villages got an eviction notification because bauxite mining was extending into their region (picture notification). Commercialisation,

privatisation, "fencing" and expropriation of formerly "free" or common property resources is making it more difficult for the "water poor" to get access or even protect whatever little access they might still have.

Power imbalances and policies work increasingly in favour of urban consumers, corporations or the landed farmers in spite of the formal democratic structures which claim to be all inclusive. Democratic mechanisms at all levels often work against the needs and interests of marginalized groups, lower castes and the Adivasi. Village institutions, for example, such as panchayats and pani panchayats often still reflect and reproduce the traditional social and economic hierarchy. Legislation on citizens' rights is an indispensable reference system for the enforcement of citizens' rights to access natural resources and common property and to satisfy their basic needs. However, recourse to legal redress is often frustrating because court rulings and government orders are not implemented but sidelined instead.

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On the other hand, the democratic system opens windows of opportunity for participatory forms of action and intervention such as protests, organisation, mobilisation, access to information and free, independent media. Biases in the panchayat system for example can be changed actively by various means and mechanisms, such as establishing quotas for women and other marginalised groups, opening the access to all villagers as they are all water users, etc. Equally important is awareness raising and capacity building for all villagers on running their own social and political affairs, in democratic rules, in organisation, management and conflict resolution. But again the most vulnerable, resource and power poor citizens have the weakest voices. They lack the resources, skills and knowledge needed to make use of the participatory opportunities, the democratic rules and institutions. In the end, there is little space to negotiate, lobby for or advocate their rights and entitlements.

Policies against exclusion

In response to this situation, more and more communities, community-based organisations, development NGOs and civil society organisations have taken up water issues with an eye toward finding solutions for the "water poor". All over India there is a multitude of initiatives and organisations in search of solutions. There are plenty of success stories all over the country. They seem to be especially successful when they take up specific "hot" issues like the explosive conflict between farmers and tanneries on the Palar River, the decade old inter-state conflict on sharing the Cauvery water, or when they attack well known multinationals like Coca-Cola and dubious, even criminal cases like Sheonath. It is much easier to garner support in a broad coalition of various groups and organisations when pressing problems and a sense of urgency is felt by numerous stakeholders. However, when mapped out, the activities, the various conflicts and defensive and offensive protests would show that they are scattered and often only loosely connected. The focus is localised and confined to local interests If more connections between struggles and issues are made, if exchange and networking between people and organisations is promoted (as is the intention of the Water & Democracy network) the wealth of experiences and the diversity of best practices and alternatives can well become building stones for an alternative water management regime in favour of the poor.

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Some approaches like rain water harvesting and watershed development have already gained broad acceptance and have spread all over the country thanks to support from governments and development organisations. Others are still niche approaches, especially if they work directly with local populations and communities like the Dalits and Adivasi with weak rights, little voice and poor political and economic standing. Often they are confronted with considerable resistance from the State, from economically and politically powerful stakeholders and vested

interests in the water sector. Awareness-creation, community organisation and local leadership including women are preconditions for empowering the resource poor and marginalised groups to become more powerful stakeholders in the negotiation for access to and control of water resources. Support should be given to processes which help these groups increase their ability to apply pressure on the government.

Alternative paradigm

The case studies discussed in this paper represent some of the aspects of an "alternative paradigm" for water governance that both includes and benefits resource-poor populations. The elements of a comprehensive water governance system include:

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Mobilisation and voice

As illustrated by the battle against the plundering of the Palar River, the exploitation of groundwater by Coca Cola and the "privatisation" of the Sheonath River, the mobilisation of local resistance has obviously proven itself as an empowering way to act against the loss of resources and rights violations. This must be backed up by organising efforts and networking so that local demands for the right to water have more weight and more voice. Democratic platforms like the "Water Parliaments" or stakeholder dialogues are helpful instruments to balance the various needs and interests, to check the distribution of power, to provide conflict resolution and supplement local governance institutions with an extra voice, especially when they fail to represent or include resource-poor groups. Simple, easy to use technologies such as participatory watermonitoring and waterbudgeting, initiated in Palar and in Madirepalli, can help communities build their own body of knowledge. Sound facts and figures can be fed into political interventions as well as practical activities such as the modification of cropping patterns. The power of knowledge helps

build organisational strength and voice and can act to counteract dominant forces.

Public goods

The defence and revival of community water rights and common property resources is part and parcel of the struggle against expropriation and for the protection of rural livelihoods and rural economy. Like in Palar River region, this means challenging the State to implement a policy which benefits all citizens. In similar cases it can be directed against individual violators of public goods, citizens' rights and common welfare like large corporations such as Coca-Cola, mining companies, etc. The cases of Madirepalli and the Sheonath River show that despite the force of privatisation, people still have the potential to collectively reclaim common property resources and call upon the public responsibility of the State. All around the country examples like Putsil, the many small-scale water management initiatives, social regulation efforts, and watershed development programmes are proving that local people can regain and/or acquire the knowledge and skills necessary to successfully install and operate infrastructure, making it a public good for the welfare of all.

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Local control and local needs in resource allocation

Mainstream development leans towards regulation either by the State – through licensing, for example, which is vulnerable to misuse and corruption – or by the "invisible hand" of the market and other economic mechanisms, which inherently deprive economically weaker sections with little or no property. Madirepalli is a model for social regulation by the people themselves; it is an example for inclusion instead of exclusion, for cooperation instead of competition. This rather unusual approach of demand-side management through sharing helps to conserve resources and increases community mobilisation and self-governance. Supported by democratic discussions on

water use and cropping systems which are otherwise left to the individual owners to decide, this approach also changes the rules of private user rights to groundwater and reverses the trend of commodification and the pushing of individual economic interests heedless of local community issues. Another example of innovative systems and institutional mechanisms involving the community is the granting of sand mining rights to local community groups instead of to contractors. Such mechanisms also function as an entry point for an economically and environmentally more sustainable rural economy based on small-scale agriculture.

Sustainable development

Unlike mainstream development trends, these initiatives, which are based on renewable energy, resource conservation, low costs and local control, offer new perspectives.

As seen in the examples of Madirepalli, the Paikmal area and in Putsil, communities have successfully used water management as an entry point for an alternative development model geared toward balancing economic efficiency needed for economic improvement with social equality and environmental sustainability. Unlike mainstream development trends, these initiatives, which are based on renewable energy, resource conservation, low costs and local control, offer new perspectives. This is especially relevant for marginal areas and for millions of people with limited assets like land, water, capital and political influence. Gaining control over one's own resources makes people less dependent on expensive infrastructure, burdensome bureaucracies and unexpected supply shortages and power cuts. They no longer need to wait for the government to come to their rescue. Putsil's micro-hydel project, for example, is not just about providing electricity for everyday conveniences, for reading in the evening and for economic activities such as running the mill. It also means "energy sovereignty" for the community. Even more, it gives power to the people politically, enabling them to decide for themselves. This could be a very practical understanding of democracy.

Challenging government policies

The case studies also show that the existing livelihood resources still available to marginalized groups can be better utilised with approaches centering on people's control over the natural resources in their vicinity. This could be broadened and replicated if public finances, policy, and extension services gave these approaches greater recognition and support. Given the right to control their own resources, and given the proper funding and support, there are a myriad of ways in which people could improve their lives and livelihoods. Watershed programmes improve water supply and irrigation, micro-hydel projects supply power for lights and village industries, the efficient use of water through micro-irrigations infrastructure and social regulation conserves groundwater resources and increase incomes – and all of these benefits come at a much lower price tag than the ambitious large-scale programmes taken on by governments and corporations.

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These projects can also contribute to improving government policy. Policy and programmes abound. There are watershed programmes, micro-irrigation schemes with subsidized sprinkler systems (like in Andhra Pradesh), rural employment guarantee schemes (like NREGA, intended primarily to rehabilitate tanks and other rural water infrastructure) and major legislation such as the Land and Water Act (APWALTA), which is trying to regulate groundwater over-use. These endeavours would have a greater success rate if they were combined with aspects of social and political development such as social regulation, participatory monitoring and other community activities. Communities would also gain a sense of democratic management of common resources. Rama Mohan from CWS maintains that blending APWALTA with social regulation, as seen in Madirepalli, would result in policies that are both "enabling" and "constructive" by complementing and improving the enforcement of government laws and regulation.

This is also a challenge to the State to shift priorities away from big projects such as multipurpose dams and river linking, which benefit industries, urban centres and big farmers, towards small-scale programmes, renewable energies and decentralised solutions that can be put into the hands of the local populations themselves.

Finally….

Water cannot be tackled as an isolated issue. It is an integral part of resource distribution and allocation in a given society as well as a precondition for building an alternative development paradigm. A water-based social movement could therefore become a mobilising and uniting force for building alliances with other movements and initiatives devoted to defending common property resources such as public land, forests or biodiversity. A movement like this can also align with policies upholding public services against the threats from neoliberal globalisation. People and organisations fighting for the right to water should therefore look "beyond the water level" for allies also committed to fighting expropriation and exclusion. Key to the success of defending water rights is, on one hand, the ability to mobilise and organise people around the issue securing the basic resources for their livelihoods, and on the other, strengthening their bargaining position by giving weight and structure to their economic and political power.

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