Water, Households & Rural Livelihoods

Research promoting access of the poor to sustainable water supplies for domestic and productive uses in areas of water scarcity

Institutional challenges for water resources management: India and South Africa

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PREFACE

This working paper was prepared as a contribution to a joint Indian, South African and UK research project on Water, Households and Rural Livelihoods (WHiRL). This project is focused on research to promote better water security for rural water supply.

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INSTITUTIONAL CHALLENGES FOR WATER RESOURCES MANAGEMENT
India and South Africa

1. INTRODUCTION

The comparison of water resources management issues in India and South Africa can be mutually beneficial given the bold new initiatives in post-apartheid South Africa and the rich history of water resource development and management in India. The focus of this paper, however, is more limited in that it looks only at the institutional structures for water resource management, and the problems that are either caused or overlooked by these structures. Both countries have a constitutional objective of providing water as a fundamental right for citizens, but there have been problems in implementing this objective. This paper hopes to direct attention towards these problems by locating them within the network of institutional linkages at habitation level, district level, state (or provincial level) and national level.

Water management in South Africa is in transition from the pre-independence situation where the minority white community used a disproportionately large share of the country's water resources for industrial, agricultural, domestic and institutional purposes and where the majority black population barely had access to sufficient water for domestic purposes and virtually none for agriculture. The government of newly independent South Africa wished to redress this situation through the new Constitution and by enacting legislation that described a new institutional framework to provide water to its citizens based on the principles of equity, sustainability and efficiency. But dismantling the previous institutional system and creating new ones in its place are not easy tasks and take time. It is, therefore, understandable that, six years later, this vision is yet to be translated fully into reality, and that the current situation is one of flux, with a co-existence of the old and the new, some degree of confusion about roles and responsibilities, and a disjunction between vision and capacity. Scarcity of water resources, however, is not as much of a problem, as are the financial, institutional and managerial resources required to tap these sources sustainably. It is nevertheless important to take stock of the problems and gaps in implementation so as to further the effort to set up an effective institutional structure to fulfil the vision of the policy framework.

In India, water management has been a government priority for several centuries, with various rulers, from the Mughals to the British and the smaller Princely States paying great attention to irrigation and drinking water supplies. In fifty years of independence, the Indian government developed the country's water resources further and today the scope for expanding surface and ground water sources is rather limited. The issue here is thus the better management of existing water resources, through a judicious mix of delegation of responsibility and authority to local institutions and large-scale investment in re-directing surplus water to deficit areas.

Although there are several points of contrast between the two cases, one common point is the emphasis on local-level management of water resources, with local government institutions and communities working together to improve access to water supplies, within an overall context of integrated water resource management in the country as a whole. Understanding the problems in achieving this ideal in each country could help focus attention and provoke constructive thinking in both contexts. This is the objective and context of the discussion in this paper.

The paper begins by outlining the South African case (section two), which presents the structure of envisaged institutional arrangements at the levels of the habitation, the district, the province and the nation, before listing problems of realising the constitutional objective, both at national and sub-national levels. The Indian case is next outlined (section three), with a similar effort to first present the complex of institutional arrangements at the habitation, district, state and national levels, before the problems are discussed along with possible causes. The fourth section has some

practical suggestions on how to overcome the institutional challenges posed by existing government structures and mechanisms, while the fifth section concludes.

2. WATER MANAGEMENT AND WATER SERVICES IN SOUTH AFRICA

2.1 The Policy Framework[1]

Citizens of South Africa today have a right to adequate quantities of safe potable water through a set of new laws, policies and institutions. This section highlights the salient features of this policy framework, while more details are given in Annexure 1.

The Constitution

The new Constitution of 1994 provides all citizens of South Africa with the right to sufficient water, and obliges the state to take legislative and other measures within its available resources to progressively realise this right (section 27).

Legislation

Two Acts of Parliament, the National Water Act (NWA of 1998) and the Water Services Act (WSA of 1997), provide the main legislative framework for the management and use of water in South Africa. The NWA deals with the management of water as a national resource, and hence details institutions for integrated water resource management, while the WSA deals with the provision of water supply and sanitation services and details water services institutions. These two Acts incorporate the imperatives of the Constitution by basing the management of water resources on the principles of equity, sustainability and optimal use or efficiency.

However, since water is used by variety of users, and water management is an important part of natural resource management, certain other legislation also affect water use in addition to these two Acts. These may be divided into three broad categories:

- *Environment-related*: The National Environmental Management Act (NEMA of 1998), which governs the overall conservation and correct utilisation of natural resources, including water. In particular, water and land use cannot contradict the provisions of this Act.

- *Local government*: The Local Government Municipal Structures Act (Act 117 of 1998), the Municipal Structures Amendment Act (Act 33 of 2000) and Municipal Systems Act (Act 32 of 2000), emphasise public participation and devolution of powers to local government, as indeed does the Constitution. This emphasis makes the action of local governments a strong factor in the management of national water resources.

- *Finances*: The Financial Management Act (FMA) as amended by the Public Finance Management Act of 1999 and the Division of Revenue Act (Act 16 of 2000) aim to regulate financial management in the national and provincial governments. Since some water management institutions (e.g., the Catchment Management Agency) are defined as national public entities, they fall under the purview of this Act

Institutions

Institutions concerned with water use in South Africa may be divided into three broad categories: national government institutions (directly and indirectly affecting water use and management),

[1] This sub-section draws on the work of Eusthathia Bolafitos and Toka Molepo, for the workshop organised by the WhiRL Project and AWARD in the Witts Rural Facility near Phalaborwa in November 2001.

water resource management institutions (statutory and non-statutory), and water service institutions (district and sub-district levels)

National government institutions

Since the national government with being the public trustee of the country's water resources acting through the Minister for Water Affairs and Forestry, this is the highest national level institution concerned with water management. While separate bodies, reporting to the Minister, have been established to deal with the development and operation of large international water resource infrastructure (e.g., the Lesotho Highland Water Project) and with international cooperation on shared water resources, the Department for Water Affairs and Forestry is the operational arm of the Minister, to carry out Constitutional as well as legislated provisions for sustainable, equitable and efficient use of the country's water resources for its own citizens. Besides the Head Office, DWAF also has regional and district offices in the provinces. DWAF is responsible for the formulation of the National Water Resources Strategy.

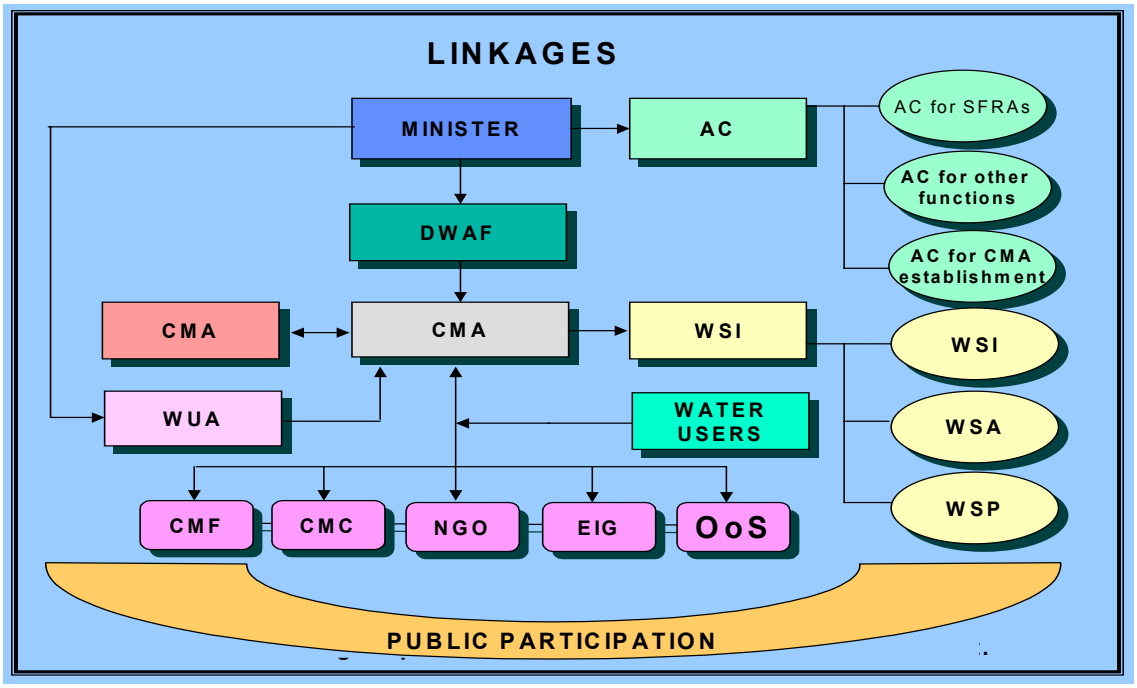
Apart from DWAF, certain other government departments affect water use, most notably the Department for Provincial and Local Government (DPLG) and the Department for Environmental Affairs (DEA) and the Department of Finance (DoF) (see Figure 1).

Water Resource Management Institutions

The country has been divided into 19 Water Management Areas (WMAs), wherein water use is supposed to be regulated by Catchment Management Agencies (CMAs), a new institution specified in the NWA. Since these WMAs are based on hydrological boundaries, they can cut across the administrative boundaries of provinces and districts. CMAs are to prepare a Catchment Management Strategy (CMS), which must be in consonance with the National Water Resource Strategy, and also incorporate and balance water requirements across ecological and human needs for each WMA. Ecological needs include the minimum flow required for a water body to carry out its ecological functions, which include supporting local flora and fauna. Human needs comprise water for households (drinking, domestic and productive purposes), institutions and industries.

Water resource management institutions can be divided into two: (1) statutory and (2) non-statutory, depending on whether or not they have been specified in legislation. Apart from from DWAF and CMAs, statutory institutions include Catchment Management Committees (CMS) and Water User Associations (WUAs), both of which are specified in the NWA as means of involving communities of users in the process of allocating scarce water resources among competing needs.

Figure 1: Water Institutions in South Africa: An Overview[2]



Until CMAs, CMCs and WUAs are up and running, the function of preparing CMSs falls on DWAF by default. *Non-statutory* institutions comprise Catchment Management Forums, Catchment Steering Committees and Advisory Committees, all of which are transitional institutions, set up to assist in the setting up of the statutory institutions, and to evolve into these statutory institutions over time.

Water user associations are the basic unit in this institutional structure and they are in effect "co-operative associations of individual water users who wish to undertake water-related activities for their mutual benefit." Despite the fact that they are regarded as water management institutions, their primary purpose is to serve as institutional mechanisms for combining resources of interested parties rather than to effect water management. Existing institutions from the old regime, such as irrigation boards, subterranean water control boards and certain water boards, will continue in operation until they are restructured as water user associations in the new regime.

Water Services Institutions

In contrast to the water resource management institutions, which deal with over-arching issues of water management across different types of uses, water services institutions interface with water users, whether individual households (residential users) or industrial users.[3] The WSA (1997) defines a water service institution as a water services authority, a water services provider, a water board and a water services committee. A Water Services Authority (WSA) means 'any municipality, including a district or rural council (as defined by the Local Government Transition

[2] Created by Toka Molepo.

[3] Water for agricultural uses is the concern of the Catchment Management Agency, governed by the National Water Act of 1997.

Act, 1993) responsible for ensuring access to water services'.[4] A Water Services Provider (WSP) means 'any person who provides water services to consumers or to another water services institution'.[5] These may be bulk water producers (called Bulk Water Services Providers or BWSPs), who provide water to users other than individuals, or simply Water Service Providers (WSPs) like Water Boards, who supply water directly to consumers (though WSPs themselves may buy water from BWSPs).

According to the Act, water services can only be obtained through a Water Services Authority and its contracted Water Services Providers. A Water Services Authority regulates how water and sanitation services are provided and who provides them, and must progressively ensure efficient, affordable, economical, and sustainable access to water supply and sanitation services. The WSA must understand the water supply and sanitation needs of consumers within its area of jurisdiction, and ensure that infrastructure for reticulation (i.e., reservoirs, pumping stations and pipelines) is developed, operated and maintained as well as managing revenue collection and maintaining consumer relations. The WSA has to come up with a Water Services Development Plan (WSDP), which is part of the process of preparing an Integrated Development Plan (IDP) in terms of the Local Government Transition Act of 1993, which details the present and future provision of water and sanitation services for individuals and for industrial uses.

However, the allocation of water for these uses has to be in consonance with what is specified in the Catchment Management Strategy (CMS).

There are two basic layers of institutions concerning water use. main old institutional structure consisted of Water Boards,

2.2 Issues In Water Supply

National Level

The main issues concerning water supply at the national level in South Africa highlighted in a DWAF draft position paper (WISA, 2001) prior to the World Summit on Sustainable Development in Johannesburg are:

- **Lack of equitable access to potable water and sanitation, particularly in rural areas** (hence greater time and effort spent on water collection by vulnerable groups including women, the poor, the aged, infirm and children).

- **Increased water demand from competing users** (i.e., agriculture, industry, domestic and ecosystems, leading to sectoral and cross-border tensions, impediments to economic growth and development and degradation of ecosystems).

- **Unsustainable funding schemes for the provision of water and sanitation infrastructure and services**, and hence a concentration on delivery with limited attention to issues of sustainability

[4] As defined in Chapter 1 (Introductory Provisions), section 1 (Definitions), item xx, of the WSA, 1997.

[5] *Ibid*, although the definition goes on to say that 'a WSP does not include a water services intermediary ('a person who is obliged to provide water services to another in terms of a contract where the obligation to provide water services is incidental to the main object of that contract' (*id.*)).

The DWAF position paper also lists six major reasons for 'inadequate progress on water resources mangement in South Africa since Rio' as the following:

- *Population growth and urban migration*, which places stress on urban water supply systems
- *Insufficient financial resources* to meet investment demand, especially for infrastructure development, especially inadequate cost recovery to recover the full costs of water supply services
- *Insufficient institutional capacity and cooperation* to operationalise the concepts of sustainable water resources management
- *Inequitable distribution of water between users* and a *lack of policy to promote the conservation of water*
- *Insufficient technology transfer from innovators to practitioners*, both within South Africa and from international sources.
- *Limited application of appropriate technologies, information and knowledge* to support decision-making and implementation

Regional and Local Levels

The WHIRL workshop in November 2001 in Witts Rural Facility near Phalaborwa brought together representatives from local government, DWAF (regional and national) and the NGO AWARD. The discussions during the group session on Institutional Development threw up the following issues at sub-national levels:

- **Large farms**: Since land is privately owned by farmers, how is one to consider water supply to people have been working for the farmer for several years and are being provided services (e.g., schooling) by the farmer? Will the farmer allow you to put in a pipeline? What if these people lose their jobs and go elsewhere? According to the Tenancy Act (?) the farmer cannot evict the workers (even if the worker dies, the family can continue to stay without an obligation to work for the farmer) and the government has to provide basic services (15,000 R) to the workers. But the government has to ask the farmer for permission to put in a pipeline: Either the pipeline is put along the field, and the farmer reticulates within, or the government, after asking the farmer, does so.

  In Winterveld (Gauteng Province), one of the Presidential lead projects from 1994 (when Mandela was President) around Pretoria, DWAF ran a pipeline into the farmer's land without his permission. The farmer then said that DWAF had given him the water (as a bonus) and he could decide whether to give the water to the people or not. This started the debate, and the legal issues began to be investigated.

- **Institutional Providers**: In institutions like mines, large game reserves and lodges, some industries and ESCOM (a government parastatal providing electricity) that provide water to their employees, what happens if the township grows beyond the boundaries of this institutional residential area? Then either the Municipality supplies them the water or they become a water services provider to the Municipality concerned. But then they have to provide basic water services to the township, comply to water services regulations (quality, quantity, etc.) and recover costs as well. Does DWAF to regulate them like other providers (e.g., Vivendi, etc.)? What if they do not have capacity to provide the entire township? Or if they refuse to supply them? Should policy be modified to deal with intermediaries (since the Act excludes intermediaries) or should the Act itself be amended?

- **Water Boards**: Established by DWAF to provide bulk services to Municipalities, they initially had conditions of supply (which they signed with the Municipalities), but now have to enter into written agreements with the Municipalities they provide (so that DWAF can regulate these contracts based on Section 19 (5) of the Water Services Act). Do the Boards and (all) the Municipalities have the capacity to negotiate these contracts? While DWAF is providing model contracts, do the Water Boards have the capacity to compete with private providers?

- **Joint Ventures**: The WSA states that Municipalities ought to give preference to a public providers, before considering a private provider. But if Randwater form a venture with a private provider, are they a public provider? If so, is the issue to be decided on the basis of majority share holdings? This is unclear presently, and requires a policy clarification.

- **Community-based Organisations (CBOs)**: Since the Municipal Systems Act lays out the procedure to be followed, the Act needs to be amended or relaxed to include CBOs as a means of ensuring Participation of Civil Society. For, it may not be fair to subject CBOs to the same procurement procedures (e.g, bidding etc.) as other well-established providers (public or private) before they can become a Water Service Provider. It is an expensive procedure to follow and all CBOs may not have either the capacity or the capital to invest in such capacity. There is currently a project on-going at DWAF to look at the Act and to get a legal opinion on it, to see if there is a way around the stringency of its procedures.

- **Cross-border Municipalities**: The lack of alignment of administrative boundaries of regions with those of Municipalities has led to unnecessary complications of allocating responsibilities for civic tasks such as providing water supply services.

- **Lack of Coordinated Governance**: There is a lack of coordination between various governments, e.g., Department of Housing, which builds houses without sufficient water or sanitary provisions. At one point, the Department of Health was building toilets in the veld, hoping that the Department of Housing would come along and build houses. Further, there is sometimes duplication of effort because of a lack of planning within DWAF and also between DWAF with other Departments. For instance, the Department of Housing is buildling houses without putting in water supply and does not consult DWAF. As a result resources are being wasted since the same community is targeted by different Departments without adequate coordination. This can also lead to 'white elephants' if a pipe is laid to fulfil an election promise, without adequate arrangements for maintenance or upkeep, and water supply problems re-surface a few years down the line.

  > Past Tonga in the Inkomazi area, the local Chief allocated land for the Department of Education (DoE) to build a school. The DOE built a school on top of an existing pipeline – either because the DoE was unaware that a pipeline existed below the proposed school or because they felt that the foundation would not disturb the pipeline and that there would not be any adverse effects of building. Basic coordination could have avoided this situation.

- **Undue political influence**: Politicians need to stop manipulating water supply problems in rural communities for political advantage. For example, opposition party representatives asking communities not to pay user charges instituted for a sustainable water supply project, not only leads to confused messages to the community at large, but can also drastically affect sustainable

  > In Nelspruit with the Biwater concession) the opposition party went around asking people to sign a petition against the BiWater concession, and people started connecting illegally where Biwater disconnected service for non-payment. Effective participation of the people in decision-making, collectively or by representation, could have prevented such a situation.

  > Phrases like 'you have to come through me' e.g., cannot move until DPLP gives the Go Ahead' or 'I am in charge of this' are symptomatic of inimical political power struggles.

water supply to the very same community. In addition, power struggle between elected representatives to maintain 'functional fiefdoms' can have a strong adverse impact on the provision of effective civic services to communities.

- **Lack of Communication with Local Communities**: If local government is not talking to communities, how can it respond to the needs of the local communities? It must do more than just put in a water pipe and then expect the community to own it, maintain it and pay for it themselves. But, how is local government going to accommodate their needs and give them a voice in technology choice, levels of service, siting, management structures, etc.? Even where communities have been given institutional space to participate in decision-making, not everyone gets consulted. oOnly the selected few, maybe the literate elite, who get to know about the projects, sit on the committees and the end users (who are the majority) are not represented.

3. WATER MANAGEMENT AND WATER SERVICES IN INDIA

3.1 Policy and Institutional Framework

The Indian Constitution also enshrines the right to adequate potable water, although it does not specify quantities.

Central Government

Although the Ministry of Water Resources in charge of overall planning, coordination and guidance in the sector of water resources (see Box 1), the Department of Drinking Water Supply is in the Ministry of Rural Development (MORD). In addition, the Department of Land Resources (DOLR) in the MORD is in charge of watershed-based rural development programmes such as the Desert Development Programme (DDP), the Drought-Prone Areas Programme (DPAP) and the Integrated Wasteland Development Programme (IWDP), which carries out water resource development activities, including building check dams and water harvesting structures (see Box 2).

Box 1: Functions of the Ministry of Water Resources

- Overall planning, policy formulation, coordination and guidance in the sector of water resources.
- Technical guidance, scrutiny, clearance and monitoring of the irrigation, flood control and multi-purpose projects (major/medium) in the States.
- Infrastructural, technical and research support for sectoral development at the state level.
- Providing special central financial assistance for specific projects and assistance in obtaining external assistance from the World Bank and other agencies.
- Overall policy formulation, planning and guidance in respect of minor irrigation and command area development, and also the administration and monitoring of the centrally sponsored schemes in these areas.
- Overall planning for the development of ground water resources, establishment of utilisable resources, and formulation of policies of exploitation, overseeing of and support to the State level activities in ground water development.
- Formulation of the national water development perspective and determination of the water balance of different basins/sub-basins for possible inter-basin transfers.
- Co-ordination, mediation and facilitation in regard to the resolution of differences or disputes relating to inter-state rivers and overseeing of the implementation of inter-state projects.
- Operation of the central network of flood forecasting and warning on inter-state rivers, the provision of central assistance for some State shemes in special cases and preparation of flood control master plans for the Ganga and the Brahmaputra.
- Negotiations with the neighbouring countries, like Bangladesh, Nepal and Pakistan, in regard to river waters, water resources development projects, and the operation of the Indus Water Treaty.

Source: Ministry of Water Resources, Annual Report 2001-2002, Government of India, 2002.

Box 2: The Ministry of Rural Development

- The three Departments under this Ministry are the Department of Rural Development, the Department of Land Resources and the Department of Drinking Water Supply.

- **The Department of Rural Development** is in charge of implementing
  - the 73rd Amendment which seeks to establish a 3-tier system of Panchayati Raj Institutions (PRIs) in all major states,
  - *Wage employment generation programmes in rural areas* (Jawahar Gram Samridhi Yojana (JGSY)) the Employment Assurance Scheme (EAS) and the new Sampoorna Grammen Rozgar Yojana (SGRY)) aimed at creating additional employment opportunities during periods of acute shortage of wage employment, as well as need-based rural infrastructure.
  - *Food for Work Programme*, a general scheme which provides foodgrain in exchange for employment in rural areas
  - *Rural roads programme* (the Pradhan Mantri Gram Sadak Yojana),
  - *Rural housing programme* (the Indira Awaas Yojana (IAY), the Pradhan Mantri Gramodaya Yojana (Gramin Awas) and the Samagra Awaas Yojana)
  - *Self Employment programmes for the rural poor* (Sarnajayanti Gram Swarozgar Yojana (SGSY)
  - *National Social Assistance Programmes*, comprising the National Old Age Pension Scheme (NOAPS), the National Family Benefit Scheme (NFBS) and the National Maternity Benefit Scheme (NMBS)
  - *Food Security programme for senior citizens* (Annapurna Scheme)
  - *Rural Technology support programmes*, through the Council for Advancement of People's Action and Rural Technology (CAPART)
  - *Women's empowerment initiatives* as part of the SGSY, JGSY, IAY, etc.
  - *Rural Sanitation Programmes,*

  besides coordinating training, IEC, land record computerisation and documentation services in rural areas.

- **The Department of Land Resources** implements all watershed development programmes of the Ministry of Rural Development, although 'programmes relating to conservation, development, and management of land resources remain scattered in different Ministries and Departments' (p. 107)

- **The Department of Drinking Water Supply**, is mandated with providing safe drinking water in all rural habitations by 2004 (p. 143), through programmes such as:
  - Accelerated Rural Water Supply Programme (ARWSP) and
  - Prime Minister's Gramodaya Yojana – Rural Drinking Water (PMGY-RDW)

Source: Ministry of Rural Development, *Annual Report 2001-2002*, Government of India, 2002.

In addition, the Ministry of Agriculture and Cooperation (MOAC) also funds and implements watershed-based development programmes such as the National Watershed Development Project for Rainfed Areas (NWDPRA) and the Watershed Development Project in Shifting Cultivation Areas (WDPSCA), besides externally aided projects like the Integrated Watershed Development Project (IWDP-Hills-Phase II), the Karnataka Watershed Development Project, and Comprehensive Watershed Development Projects in Tirunelveli (Tamil Nadu), Ramanathapuram (Tamil Nadu), Koraput (Orissa), Madhya Pradesh and Karnataka (see also Box 3).

Box 3: Functions of the Ministry of Agriculture and Cooperation

- Formulation and implementation of national policies and programmes aimed at achieving rapid agricultural growth through optimum utilisation of the country's land, water, soil and plant resources
- Undertaking measures to ensure timely and adequate supply of inputs and services such as fertilizers, seeds, pesticides and agricultural implements
- Providing agricultural credit and crops insurance to ensure remunerative returns to the farmers for their agricultural produce
- Collection and maintenance of a wide range of statistical and economic data relating to agriculture required for development planning,
- Organising agricultural census
- Assisting and advising States in undertaking scarcity relief measures and in management of natural calamities (floods, droughts, cyclones, earthquakes, etc.)
- Formulation of overall co-operative policy in the country
- Developing general policy relating to the marketing of agricultural produce, including pricing, exports, etc.
- Participating in activities of international organisations for fostering bilateral cooperation in agricultural and allied sectors and for promotion of export of agricultural commodities.

Source: Ministry of Agriculture and Cooperation, *Annual Report 2001-2002*, Government of India, 2002.

Finally, the Ministry of Environment and Forests (MOEF) also implements watershed-based development schemes such as the National Eco-Development Programmes.

State Government (Andhra Pradesh)

In addition to centrally sponsored schemes, which are implemented by state governments with a 100% grant from the central government, the State government also implements some schemes where they share the costs with the Central Government.

Within States, the Department of Irrigation is in charge of developing and maintaining major, medium and minor irrigation projects as well as groundwater development, while the Department of Panchayati Raj and Rural Development, the Department of Environment, Forests, Science and Technology and the Department of Agriculture implement watershed-based development programmes (see Annexure 1 for more details). In addition, the Department of Finance and Planning oversees the work of the state remote sensing agency, which is in charge of investigating and proposing areas in the state for water management, afforestation, etc.

3.2 Issues in Water Supply

Despite the fairly impressive array of government initiatives for water resource development and poverty alleviation, their implementation has raised several issues.

National-level

- **Lack of visioning and integrated policy:** There is a lack of integrated policy at the central and state levels, both in terms of content and institutions, to guide resource development, allocation and use, especially with regard to water supply and management at the local level.

- **Lack of coordination within Government:** There are several ministries and departments dealing with water, directly or indirectly, but more coordination is required both between Departments within the same Ministry and also between Ministries.

State-level

- **Institutional development on sectoral lines:** Historically, government institutions have been formed on Departmental lines and not to implement a coordinated vision of (or vision of) resource development. Instead, they follow narrow sectoral objectives, without reference to (or without feeling the need to consult) other departments working in related sectors. Surprisingly, the State Department of Agriculture does not deal with water – but recently, under the insistence of the Chief Minister, it has been brought under the purview of the Water Conservation Mission (permanent invitee to its meetings).

- **Disjunction of Institutional Responsibility:** National Water Act makes recommendations for water use at local level (e.g., farmer involvement in irrigation management, 'sound watershed management' to control floods, making drought-prone areas less vulnerable to droughts, shift to less water intensive land uses, etc.) - but no link with sectors and their institutions working explicitly on drought-prone areas (e.g., watershed-based poverty alleviation, power sector reforms, forestry, etc.) and no local presence to influence local level management of water resources.

Field level

- **Lack of Field-level Coordination:** Despite an innovative state-level Act (Government of AP) dealing with the Constitution and Election of Water Users Association (circa. 1997), which is a field level body dealing with the development, maintenance and management of every irrigation source (e.g., tank, canal, river, etc.), there is little overlap with similar field level bodies being promoted by other programmes (e.g., Participatory Irrigation Management groups promoted by the MoWR, Watershed Associations and Watershed Committees of the watershed programme, etc.). Also WUAs have very little funding and hence find it difficult to carry out their stipulated functions.

- **No mechanism to enforce effective functioning of WUAs :** Given the objectives of WUAs, the mechanisms to carry out their functions are often too politicised to make objective and rational decisions on water use.

Factors affecting the functioning of Institutions

- **Undue Political Interference:** Several politicians harass officials for a 'cut' of the funds allocated for development of large government projects (e.g., irrigation), and derail planned work and/or victimise government officials (e.g., with punitive transfers) if their demands are not accommodated.

- **Non-viable and Unplanned Schemes:** Schemes (e.g., water supply schemes) which do not have assured water in the source, or which do not have favourable cost benefit ratios, are sometime taken up for implementation purely for political considerations. Sometimes, schemes are announced by politicians and even foundations stones are laid, but there has been no exploration or thinking about the scheme by competent authorities about its feasibility and relevant departmental (e.g., environmental) clearances. Due to political compulsions, officials are often forced to implement the scheme – leading to further problems or incompletion, and hence, to a wastage of valuable national resources.

- **Long delay in implementing planned irrigation projects:** A combination of a lack of sufficient fund allocation (despite a higher agreed budget) and political conflicts over water

rights and allocations have caused a large number of sanctioned irrigation projects to proceed slowly and hence overshoot their estimated costs due to inflation. This has led not only to continued hardship to the expected beneficiaries (and the frustration due to unfulfilled expectations), but also to a lack of belief in governmental and political promises.

- **Low quality constructions:** Institutionalised corruption (where contractors, for instance, pay bribes to get contracts) has led to poor quality construction as these contractors try to reduce the quality of construction (e.g., in using less than required cement in concrete or sub-standard materials) to make up their profit margins. This leads to dangerous construction, and collapsing structures.

- **Institutionalised Corruption:** While there are established systems (of percentages) of corruption in sanctioned projects, corrupt politicians and bureaucrats inflate costs of new proposals as well. Upright bureaucrats, who protest these systems or take strict action against corrupt officials or politicians, are victimised – often with allegations of corruption!

> A water supply canal project in South India, initially estimated at Rs. 4 crores was hiked to Rs. 30 crores, at the instance of government officials, acting in connivance with local politicians. Actually, the initial estimate based on the Standard Schedule of Rates (SSR) already included a profit margin for the contractors.

- **Contractor cartels to counter tendering:** Even the standard government practice of calling for sealed tenders for large-scale government construction projects, to counter the problem of favouritism and over-invoicing, is being countered by cartels of contractors who agree on a minimum bid. The contractor who gets the bid either shares the proceeds with the others, or shares the benefit by awarding sub-contracts. The awardee will also have to share the proceeds with local politicians and government officials.

- **Non-availability of good NGOs:** Although there are good NGOs who have the competence and experience to do community level mobilisation and encourage people's participation, there are several NGOs who are given charge of doing similar work, but do not have the required competence to carry out their stipulated functions. The consequence is a lack of adequate community involvement on the ground (as opposed to on paper), in schemes where people's participation is stipulated (e.g., in watershed management, irrigation management, forest management, etc.).

- **Water Quality Issues:** The State Pollution Control Board is measuring base-level pollution in existing water bodies in different watersheds in the state, to identify areas where new water-using industries (both as a source and a sink) can be located. However, this work is not coordinated with the work of the Water Conservation Mission or the watershed development agencies.

4. OVERCOMING INSTITUTIONAL CHALLENGES

Institutional Challenges

Four common challenges characterising the cases of South Africa and India in the area of water supply and sanitation provision are the following:

- **The need to improve coordination within government:** Although a significant amount of literature exists on laws, policies, rules and regulations governing the provision of water supply services to the citizens of both countries, there is a great need for clarity on roles and responsibilities within government institutions. Better coordination is needed both within government structures, and in the way in which government bodies interact with local

communities for provision of water services. Greater coordination and streamlining within government departments needs to go beyond official statements affirming commitment to coordination, to implementing the changes required in the rules, regulations and procedures critical to effective coordination.

- **The need to build capacity at all levels:** Capacity building is vital at different levels within government institutions, as also within local communities, in order to improve the provision and maintenance of water supply services. These capacities do not only relate (as is commonly understood) to technical issues, but more importantly to a range of social, managerial and institutional issues from organising effective community participation, building solidarity, vision and a sense of purpose within communities, and starting and running efficient community-based organisations to dealing with government procedures and legal requirements and conflict resolution within CBOs. Not everyone can do these, and even those who can, require the others (especially superiors or elders) to be sensitised to the issues concerned.

- **The need for effective involvement of local communities:** Even after capacities have been enhanced, there is a need to develop institutional space and mechanisms for governments and local communities to interact effectively. Official consultations with local communities need to be judicious in choosing between full participation and participation by representation, using existing democratic institutions, or empowering CBOs to play this role. Explicit mechanisms have to be drafted into government rules and regulations, explained to concerned officials, and 'back-stopped' by a capable body till it becomes accepted practice.

- **The need for good quality information for decision-making:** Participation in decision-making is a means to an end, and the goal of informed decision-making requires good-quality information on a range of issues, technical, social, economic, legal and institutional.

Steps to overcoming these challenges

The are three key practical steps to improving the effectiveness of institutions to ensure better access to water supply and sanitation services, especially for rural communities:

Step 1: INFORMATION INVENTORY

- **Information Collection and Collation** – on technical and social/institutional issues, including an inventory of physical and other resources, and a capacity building needs assessment, but focusing on issues on which policy-makers require more clarity (e.g., demand assessment, willingness to pay, cost recovery, potential for scaling-up, procedural problems, legal issues, etc.). The priority, however, should be on collating existing secondary information and on tapping a wide variety of resource persons (including community members) for issues and suggestions for improvement.

- **Analysis and Feedback** – Analysing this information is as difficult and as essential as collecting the required information, and requires a high level of research and analytical skills. But the output must be appropriate feedback to local communities, local government and policy makers, of the results of the analysis of information collected and collated, and the identification of tasks ahead.[6]

[6] Two examples of how this may be done in practice, and the issues involved in water supply and sanitation, are the Water Resource Audits carried out in Karnataka (Batchelor et al., 2000) and Andhra Pradesh (Ramamohan Rao, et al., 2003).

Step 2: KNOWLEDGE AND AWARENESS-RAISING

- **Capacity Building and Awareness Raising** – on a range of issues, technical, social, economic/financial, managerial, and institutional, on an on-going basis.

Step 3: INSTITUTIONAL REFORM

- **Coordination and streamlining within government** – to ensure that resources are not wasted through duplication of effort or by a lack of integration of purpose, policies, procedures and programmes.

- **Piloting mechanisms for public participation** – in public decision-making, given that a few can 'take over' a focus (or reference) group of community members, and that too large a group can be unwieldy and unproductive. Facilitation of these stakeholder meetings is vital, and a skill that not everyone has. Finally, the lessons learnt have to be used for policy reform.

While none of these is new, it is crucial that these are carried out in the appropriate manner. Some academic-quality research is a requisite n the first step, while the second steps requires informed and appropriate capacity building, focusing on the final outcome and not on the mere activities of building capacity. Similarly, the final steps of institutional reform require more than commitment from senior government officials. It requires practical facilitation and mechanisms to ensure that lessons learnt lead to appropriate change.

Given the workloads of most government officials, NGOs can play a vital role as facilitators in all three steps.

5. CONCLUSION

Despite well-intentioned policy documents, providing safe drinking water to citizens remains a problem for both India and South Africa. However, the usual call for 'policy makers' to listen and draft new policies, is not very effective. There is a need for a thorough re-examination of existing procedures and norms of government and NGO functioning, following a clear understanding of the linkages, roles and responsibilities of the various institutions engaged in providing water supply services, especially to rural communities.

Such a re-examination is best carried out in a facilitated multi-stakeholder setting, with a clear mandate to modify procedures and institute mechanisms that improve water supply services to the level required by the Constitution. Within this process NGOs and external projects can play an important part, namely carrying out pilot projects, research and analysis and the infusion of new ideas.

REFERENCES

Batchelor, C.H. M.S. Ramamohan Rao, A. J. James (2000), Karnataka Watershed Development Project: Water Resources Audit. KAWAD Report 17, KAWAD Society, No 250 1st Main Indiranagar, Bangalore 560 038.

M.S.Rama Mohan Rao, C.H.Batchelor, A.J.James, R.Nagaraja, J.Seeley, J.A.Butterworth (eds.) (*forthcoming 2003*) Andhra Pradesh Water Resources Audit, Andhra Pradesh Rural Livelihoods Programme, Government of Andhra Pradesh.

1. **Department of Irrigation and Command Area Development (I & CAD)**

Functions

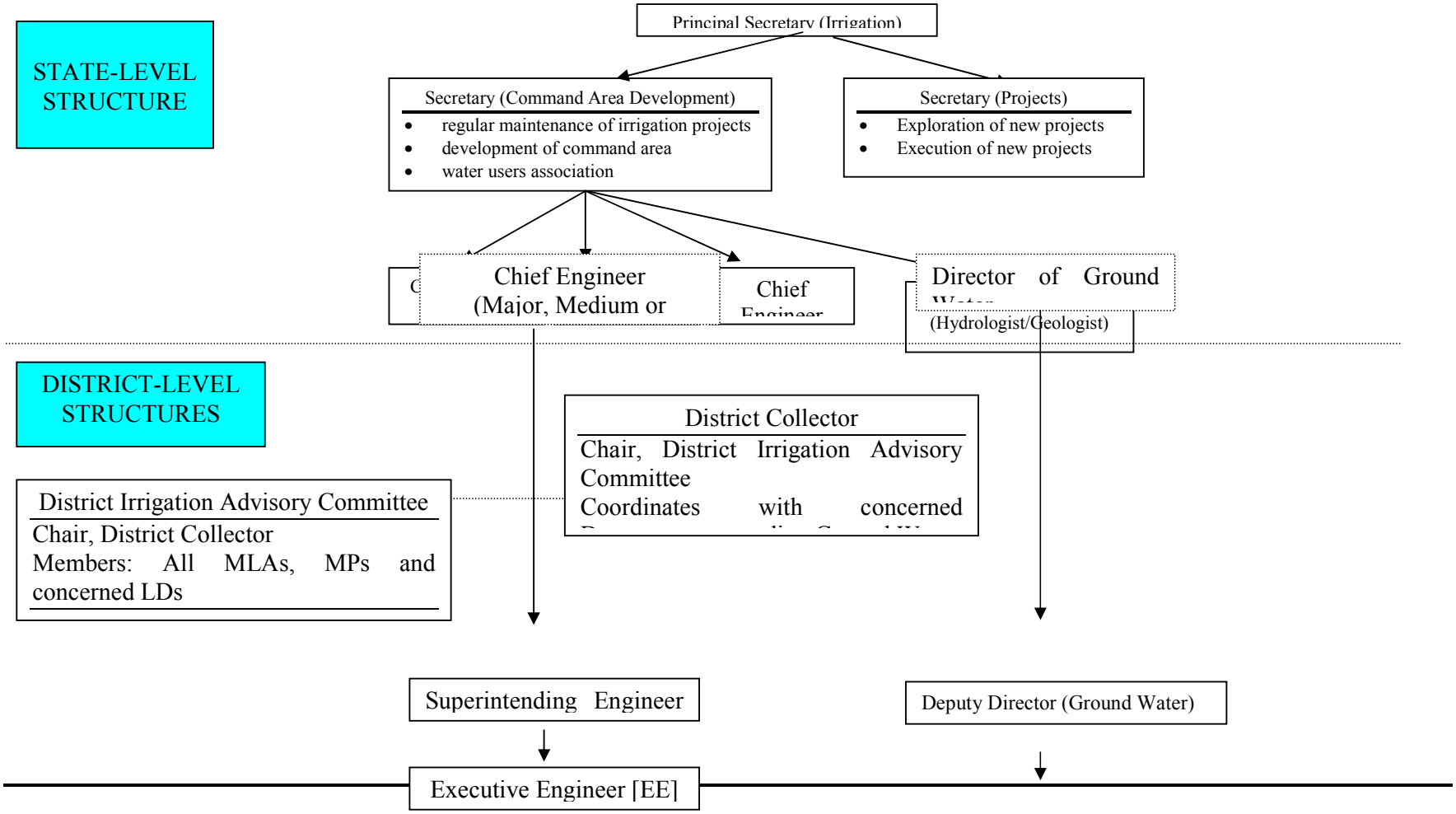
Surface Water

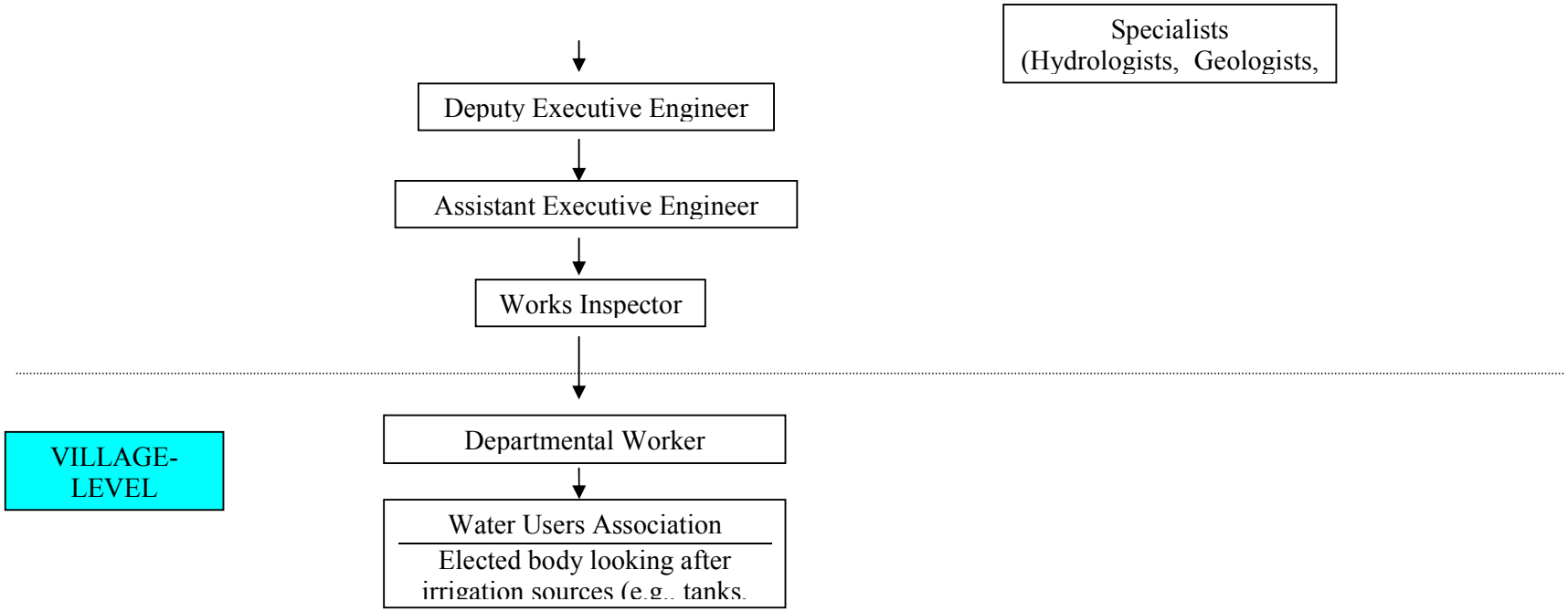
- Planning and proposing new irrigation projects and
- Sanctioning new projects given budget availability
- Development of command area (development of distribution networks of canals)
- Maintenance of existing (major, medium and minor) irrigation schemes

Ground Water

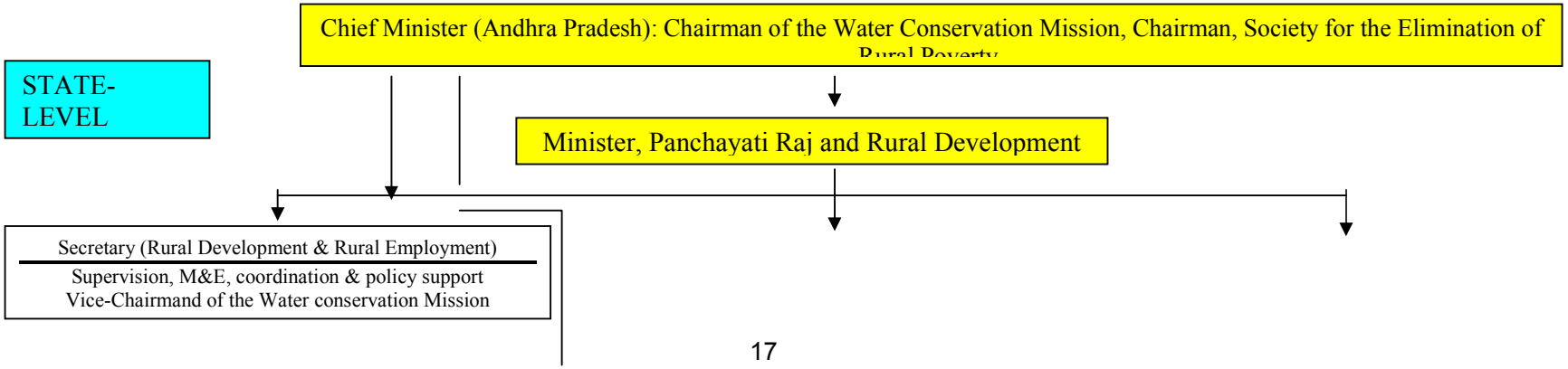
- Investigation and development of ground water resources
- Analysis of ground water status in the entire state
- Identify ‘dark’ and ‘gray’ areas
- Suggest (to various user departments) appropriate places for groundwater utilization
- Suggest (to various user departments) appropriate places for groundwater recharge (water harvesting structures).

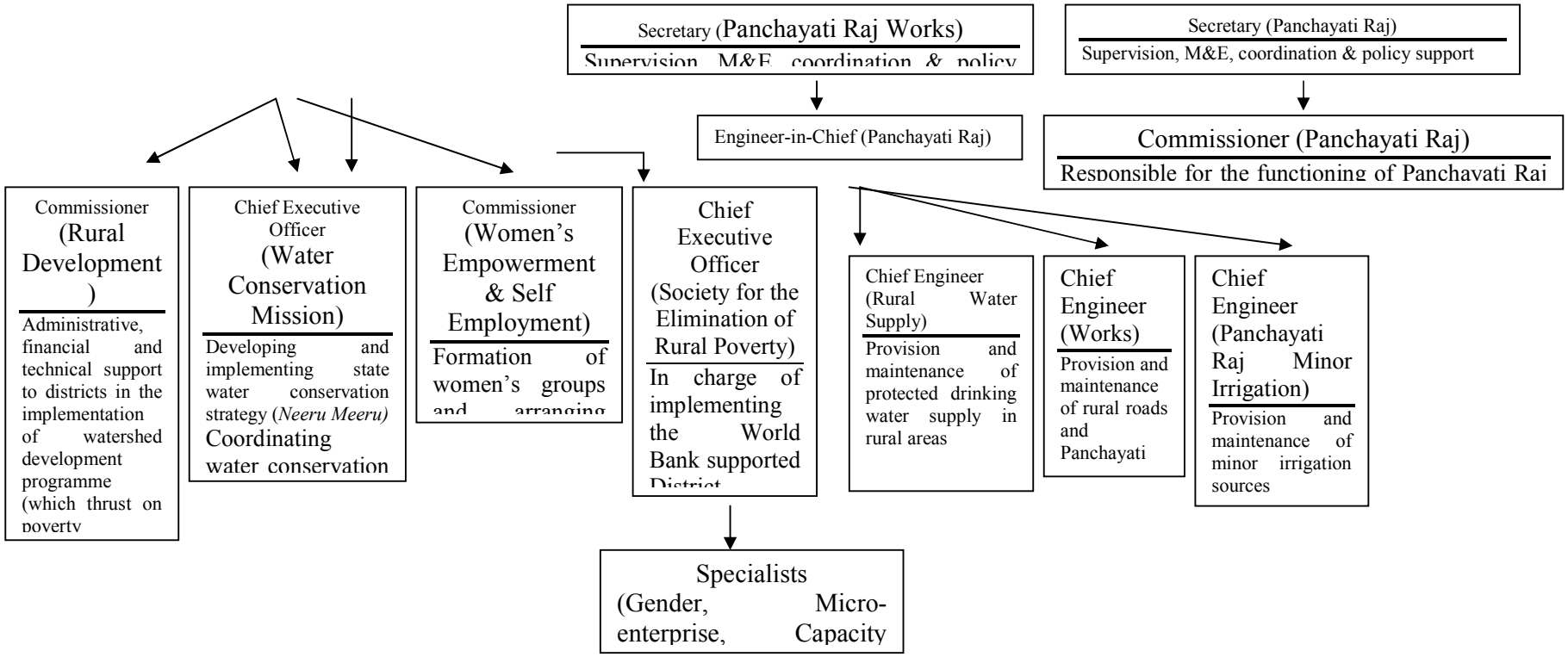
Structure

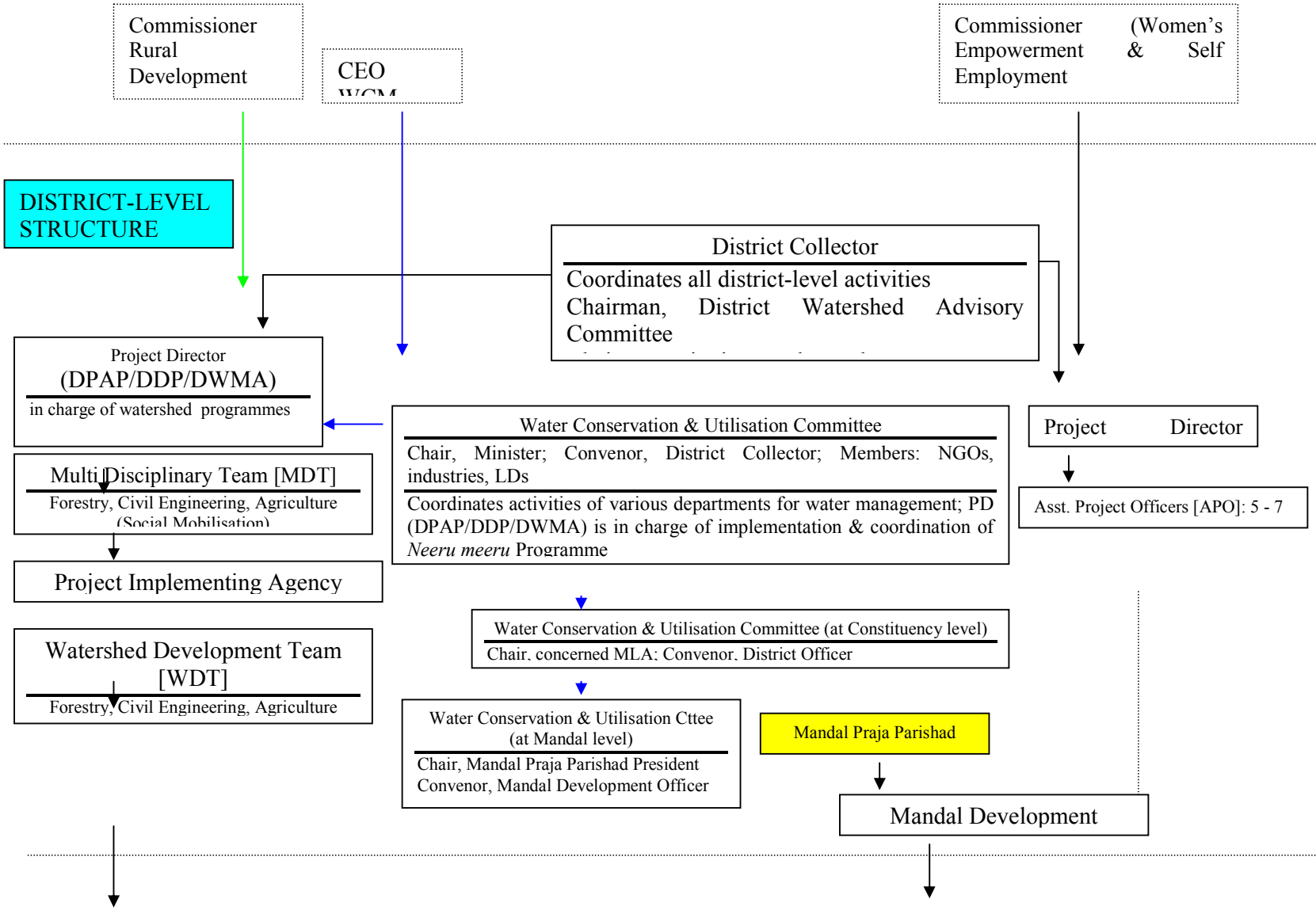

STATE-LEVEL STRUCTURE
Principal Secretary (Irrigation)
Secretary (Command Area Development)
regular maintenance of irrigation projects
development of command area
water users association
Secretary (Projects)
Exploration of new projects
Execution of new projects
Chief Engineer (Major, Medium or
Chief
Director of Ground
(Hydrologist/Geologist)
DISTRICT-LEVEL STRUCTURES
District Collector
Chair, District Irrigation Advisory Committee
Coordinates with concerned
District Irrigation Advisory Committee
Chair, District Collector
Members: All MLAs, MPs and concerned LDs
Superintending Engineer
Executive Engineer [EE]
Deputy Director (Ground Water)

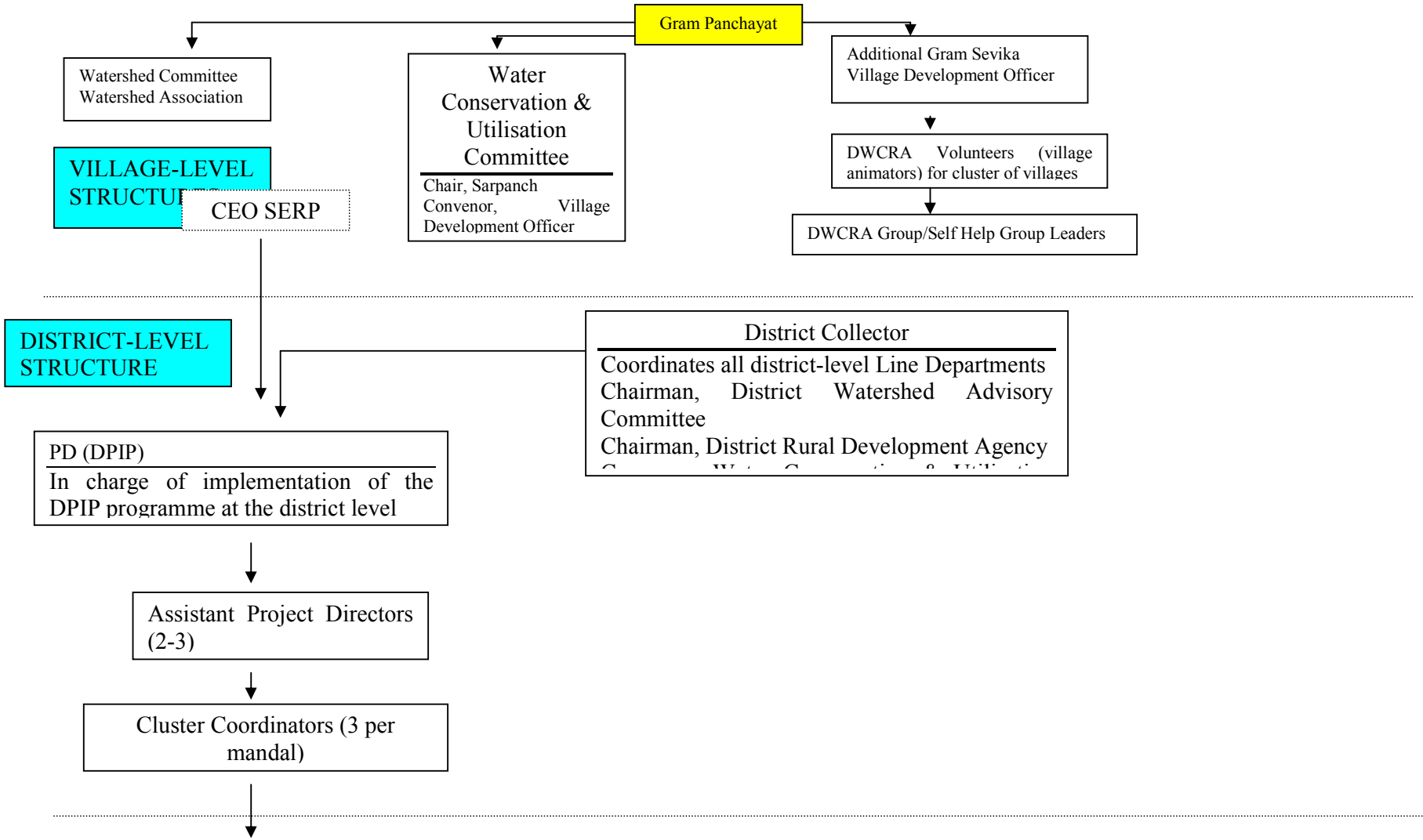


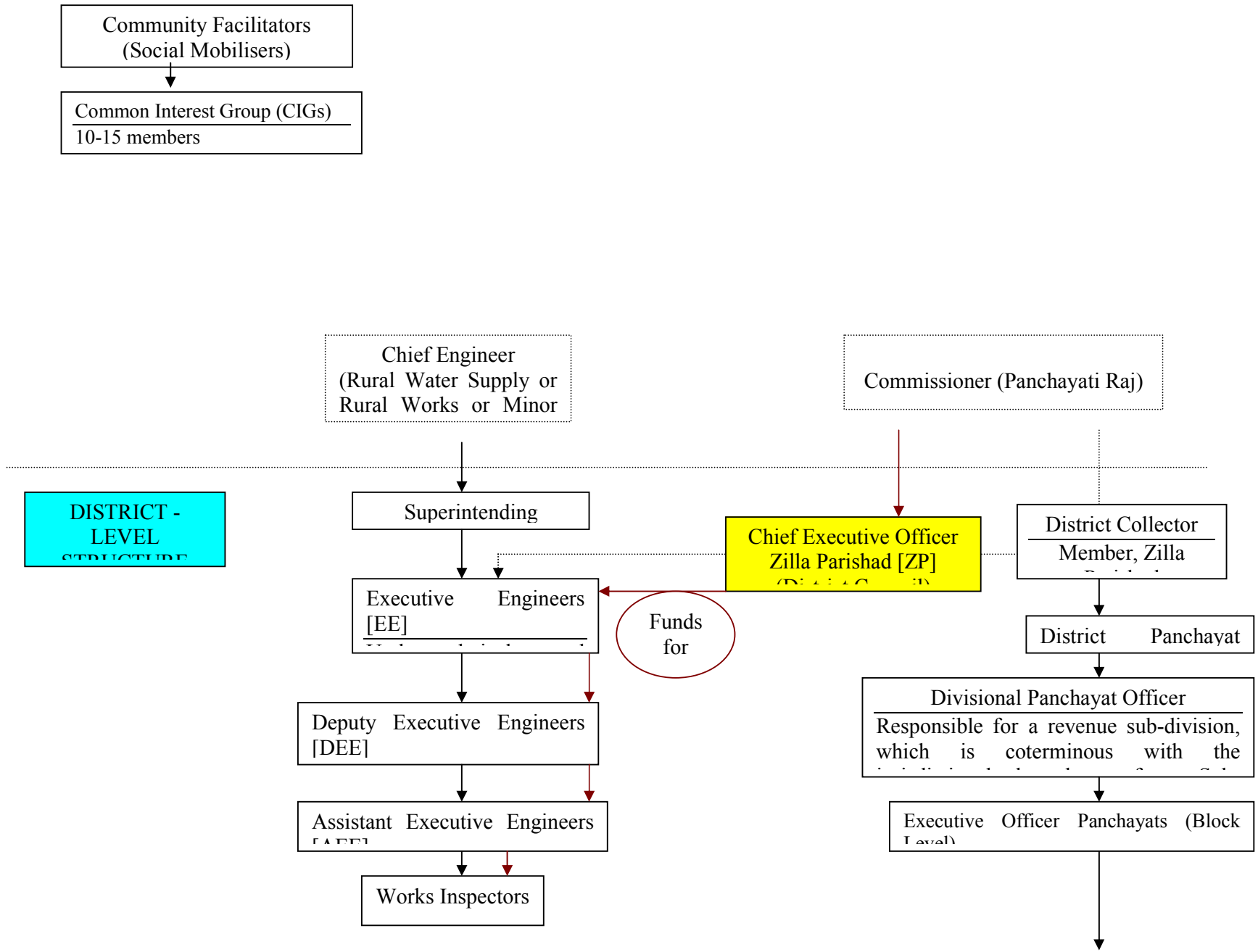
2. **Department of Panchayati Raj and Rural Development (PR & RD)**




Secretary (Panchayati Raj Works)
Supervision, M&E, coordination & policy
Secretary (Panchayati Raj)
Supervision, M&E, coordination & policy support
Engineer-in-Chief (Panchayati Raj)
Commissioner (Panchayati Raj)
Responsible for the functioning of Panchayati Raj
Commissioner (Rural Development)
Administrative, financial and technical support to districts in the implementation of watershed development programme (which thrust on poverty
Chief Executive Officer (Water Conservation Mission)
Developing and implementing state water conservation strategy (Neeru Meeru)
Coordinating water conservation
Commissioner (Women's Empowerment & Self Employment)
Formation of women's groups and arranging
Chief Executive Officer (Society for the Elimination of Rural Poverty)
In charge of implementing the World Bank supported District
Chief Engineer (Rural Water Supply)
Provision and maintenance of protected drinking water supply in rural areas
Chief Engineer (Works)
Provision and maintenance of rural roads and Panchayati
Chief Engineer (Panchayati Raj Minor Irrigation)
Provision and maintenance of minor irrigation sources
Specialists (Gender, Micro-enterprise, Capacity


Commissioner Rural Development
CEO
Commissioner (Women's Empowerment & Self Employment
DISTRICT-LEVEL STRUCTURE
District Collector
Coordinates all district-level activities
Chairman, District Watershed Advisory Committee
Project Director (DPAP/DDP/DWMA)
in charge of watershed programmes
Water Conservation & Utilisation Committee
Chair, Minister; Convenor, District Collector; Members: NGOs, industries, LDs
Coordinates activities of various departments for water management; PD (DPAP/DDP/DWMA) is in charge of implementation & coordination of Neeru meeru Programme
Project Director
Asst. Project Officers [APO]: 5 - 7
Multi Disciplinary Team [MDT]
Forestry, Civil Engineering, Agriculture
(Social Mobilisation)
Project Implementing Agency
Water Conservation & Utilisation Committee (at Constituency level)
Chair, concerned MLA; Convenor, District Officer
Watershed Development Team [WDT]
Forestry, Civil Engineering, Agriculture
Water Conservation & Utilisation Cttee (at Mandal level)
Chair, Mandal Praja Parishad President
Convenor, Mandal Development Officer
Mandal Praja Parishad
Mandal Development


Gram Panchayat
Watershed Committee
Watershed Association
Water Conservation & Utilisation Committee
Chair, Sarpanch
Convenor, Village Development Officer
Additional Gram Sevika
Village Development Officer
DWCRA Volunteers (village animators) for cluster of villages
DWCRA Group/Self Help Group Leaders
VILLAGE-LEVEL STRUCTURE
CEO SERP
DISTRICT-LEVEL STRUCTURE
District Collector
Coordinates all district-level Line Departments
Chairman, District Watershed Advisory Committee
Chairman, District Rural Development Agency
PD (DPIP)
In charge of implementation of the DPIP programme at the district level
Assistant Project Directors (2-3)
Cluster Coordinators (3 per mandal)

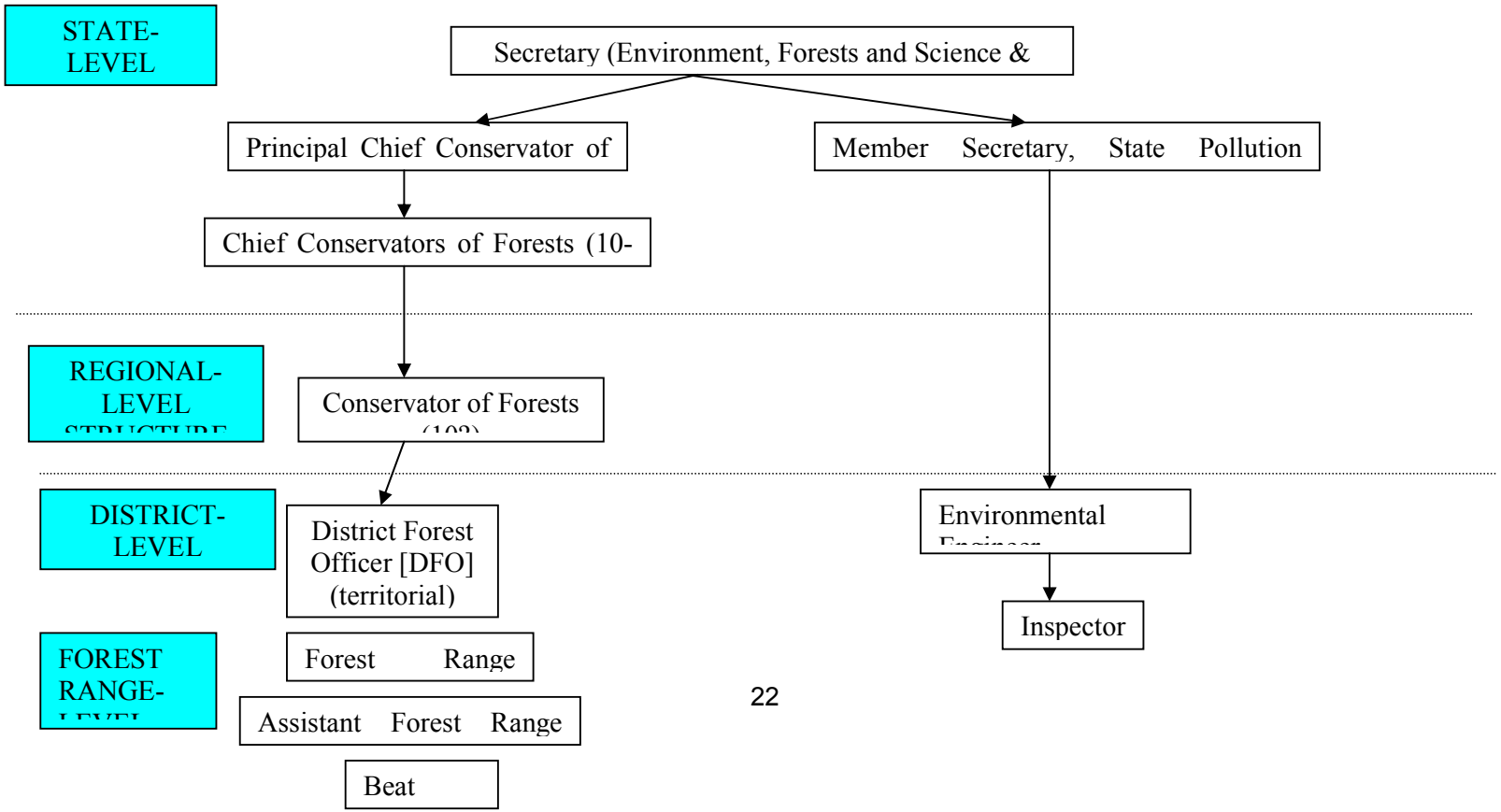

Community Facilitators
(Social Mobilisers)
Common Interest Group (CIGs)
10-15 members
Chief Engineer
(Rural Water Supply or
Rural Works or Minor
Commissioner (Panchayati Raj)
DISTRICT -
LEVEL
Superintending
Chief Executive Officer
Zilla Parishad [ZP]
District Collector
Member, Zilla
Executive Engineers
[EE]
Funds
for
District Panchayat
Divisional Panchayat Officer
Responsible for a revenue sub-division,
which is coterminous with the
Deputy Executive Engineers
[DEE]
Assistant Executive Engineers
Executive Officer Panchayats (Block
Works Inspectors

3. **Department of Environment, Forests, Science and Technology**

Functions

- Initiation and maintenance of soil and moisture conservation works
- Forest protection and new afforestation (including private efforts in social forestry)
- Improvement of environment and containment of pollution

Structure



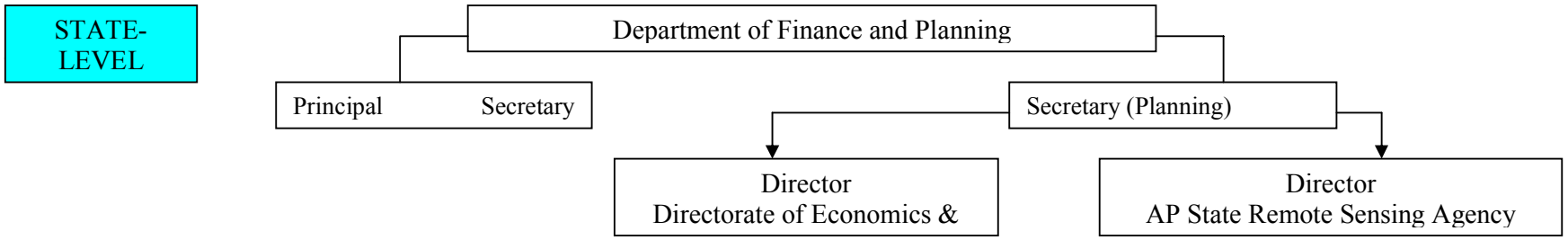
4. **Department of Finance and Planning**

Functions

- Review of the performance of all Departments, to ascertain the status of the programmes
- Preparation of annual Perspective Plans and annual Vision Plans
- Utilisation of database, including remote sensing data, to help various Departments analyse the impact of past activities (using remote sensed photographs) and to plan future activities (e.g., APSRAC Director is a permanent invitee to planning meetings (e.g., for *Neeru Meeru*)

ASRAC

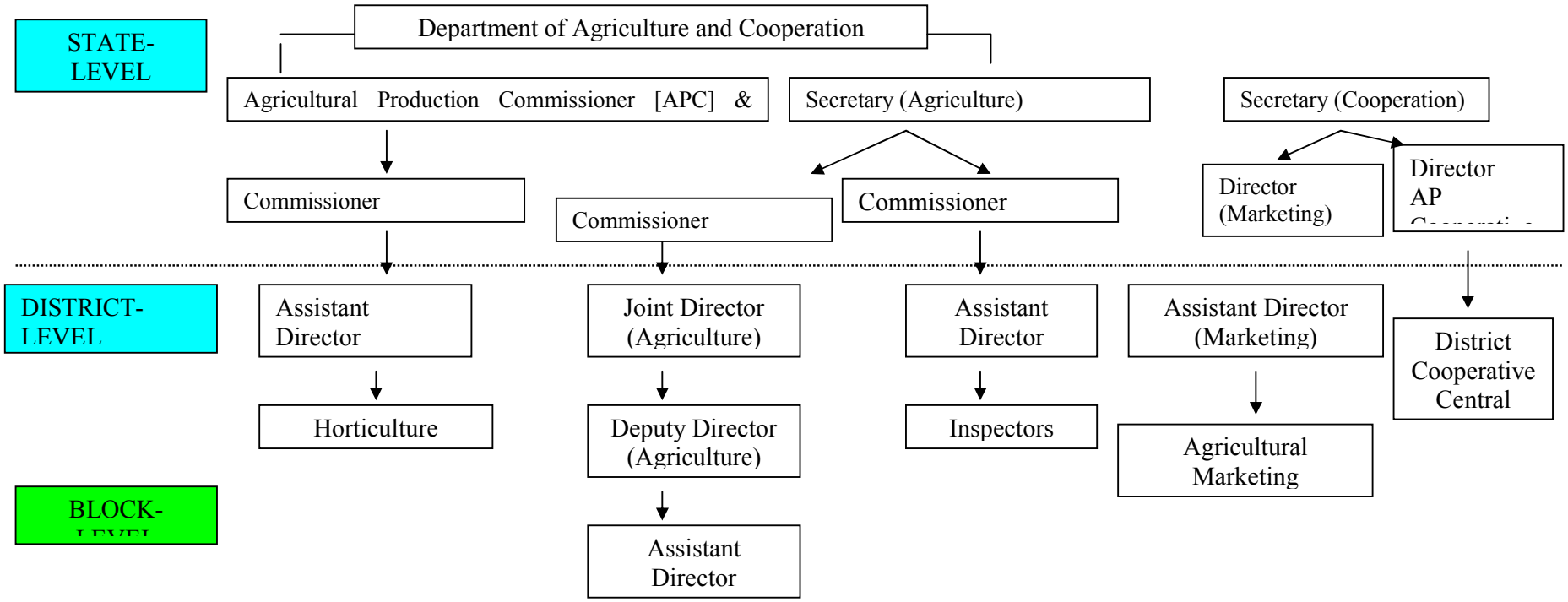
- Investigates and proposes areas in the state for water management, afforestation, etc.
- Carries out work commissioned by different departments/agencies (including Collectorates), against payment.

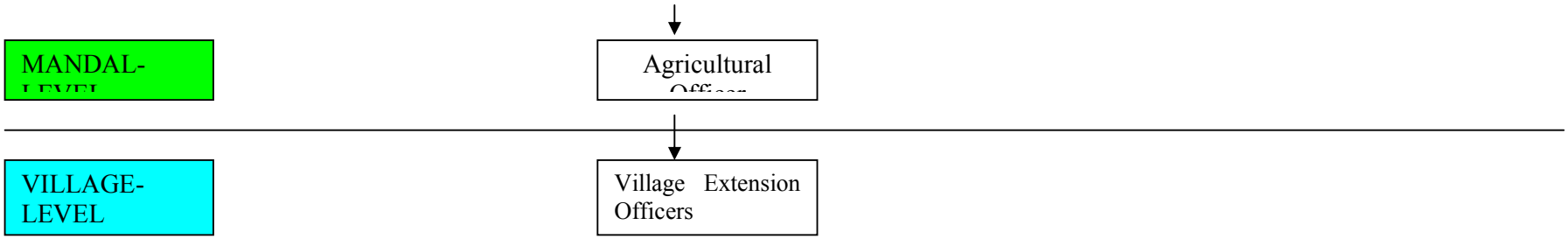


5. **Department of Agriculture**

Functions

- Preparation of vision document and policies for the development of agriculture in the state
- Implementation of various schemes to improve agricultural production
- Research and development to improve production and productivity
- Coordination with a number of state and central level organisations and the private sector organisations on various issues dealing with agricultural production in the state (e.g., for procurement and supply of seeds, improvement of seed quality, pesticides, fertilisers, etc.)




MANDAL-
Agricultural
VILLAGE-
LEVEL
Village Extension
Officers