THE GODAVARI PRIMER

AN ESSENTIAL GUIDE ON THE UTILIZATION OF THE GODAVARI WATERS AND RESOURCES

SAKTI

April 2006

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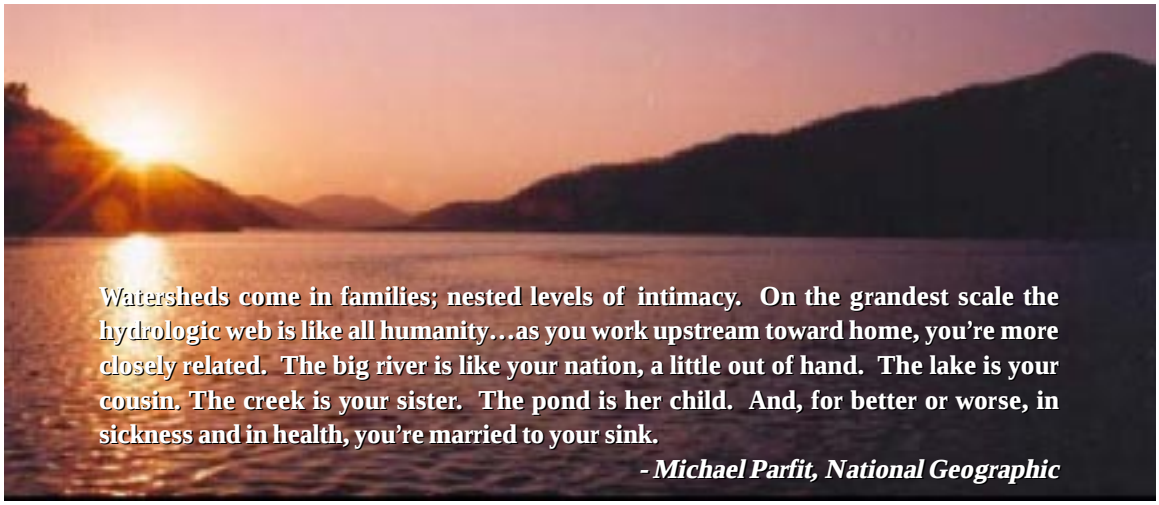


The Godavari at Bison Hills

Chapter 1
INTRODUCTION

Andhra Pradesh has experienced a decade of drought that has had a debilitating impact on its rural economy. It also had a significant impact in the General Elections of 2004. The present state government came to power last year with the promise of completing all the ongoing and pending water projects within five years and it is moving with a sense of urgency to do so. Various proposals and counter proposals are being made. Tenders have been floated and works have been assigned. Inevitably there are controversies about the projects and the media is carrying intense debates on them.

Planning and development of water resources such as rivers, has so far been the exclusive prerogative of governments. But fresh water is becoming scarce, and water demand and use have increased, with competing sections of society, sectors of the economy and regions, making their demands forcefully, sometimes even taking the law into their own hands. It is to be noted that no foundation for any water project in the recent past has been laid without heavy security and police presence. The upstream vs. downstream problems have already surfaced in the Krishna River, and the Godavari River is no exception to this trend. The downstream state of Andhra Pradesh (AP) is often found taking up cudgels against the upstream states of Karnataka and Maharashtra. On the Godavari too, A.P has already raised objections about a few projects that have come up in Maharashtra, for instance, the Babli Project.

The Telangana leadership is demanding its share of the river Godavari to be decided through a due process of arbitration before taking up schemes that will benefit other parts of the state. The forest communities, which will be inevitably displaced by the projects, are demanding a just rehabilitation policy and program, if not a total ban on the projects. The delta farmers have their own apprehensions about projects coming upstream although they are not as affected by water scarcity as the other two regions. The perennially drought-prone region of Rayalaseema is asking for a share too, which will entail an inter-basin transfer of water with unknown implications.

While the Government of Andhra Pradesh asserts its rights over the river waters, let us not forget our responsibility too, which is to nurture the river for it to live and flow for eternity, and be nurtured by the river in return. We need employment, we need development; but not at the cost of

the survival of our rivers and the survival of our people. We have to think of development in a manner that will nurture the river as well as all living creatures and the environment in which they live.

It is in this context that civil society organizations that deal with people from a variety of sectors and livelihoods have to increasingly enter the debate on the utilization of the Godavari waters. A transparent and public accounting exercise has to be undertaken, which will give a clear picture on questions such as, who benefits, who loses by one or the other scheme, who will bear the cost of the schemes, what will be the impact on the river, and what will be the impact on the basin, to name some of the major concerns. This booklet is a part of such an exercise and focuses on the principles based on which, the utilization of river waters should be planned.

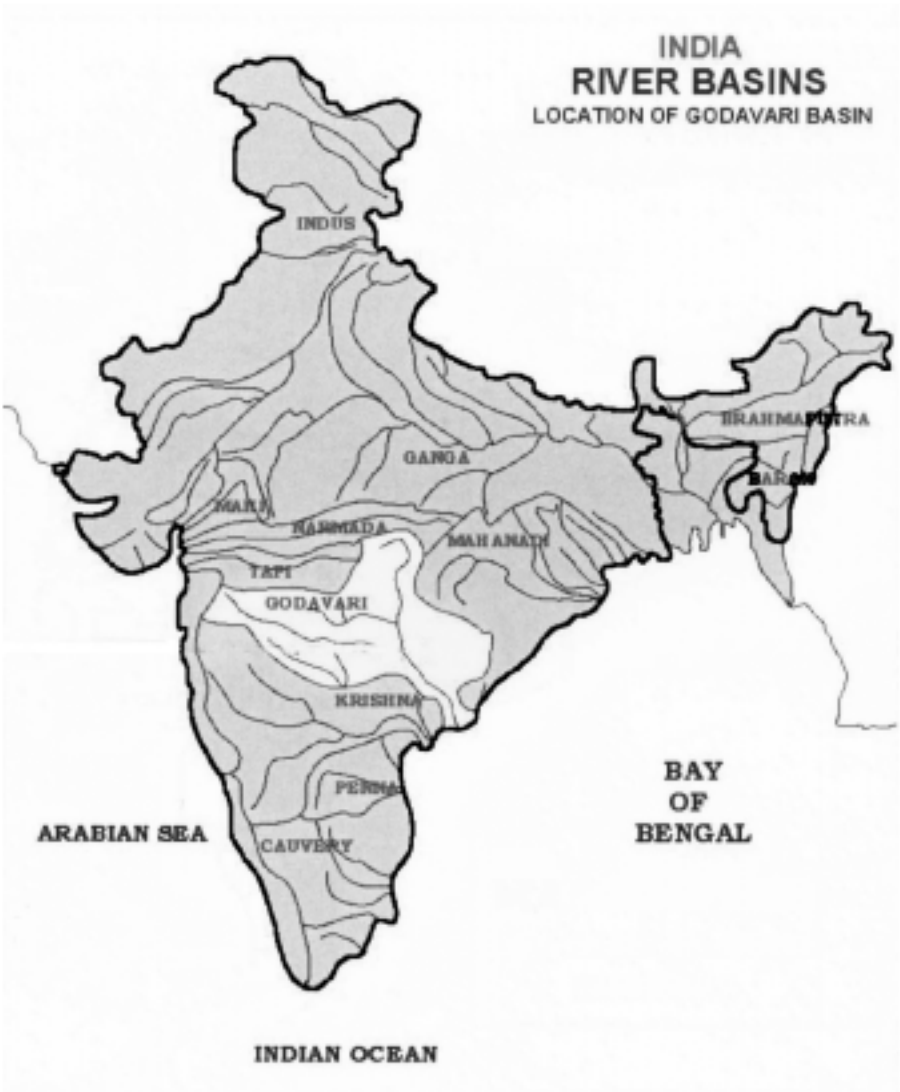
Humankind has given birth to science and technology, but science and technology must have the foundation of a philosophy about how we will utilize our rivers, our lands and other natural resources. Technology not embedded in a philosophy is like a sword without a sheath, a seed without a shell, or a fruit without a skin that prevents it from perishing. This philosophy in turn must be operationalized by the deployment of appropriate programs, policies and technologies. A system of governance institutions relating to water use and management, which is transparent, participatory and accountable, needs to be put in place.

Most importantly, planning and implementation of policy must look at not just the river but the whole basin, for what happens to the river depends on what happens in the basin and vice-versa. For instance, deforestation in the catchment areas has affected river flows and siltation rates drastically. Similarly, dams and reservoirs have had a major impact on the river's physical features as well as life forms right up to the estuary. *An understanding of the processes of the symbiotic relationship between the river and the basin must be reflected in policy planning and implementation.* It should also provide support to the historical livelihood strategies and traditions of forest communities, farmers, fishing communities and others, which have evolved out of geographical necessities. These historically evolved traditions and cultures are also repositories of indigenous knowledge systems that will face eventual extinction due to their exclusion from the development process and displacement.

A positive step in this direction is the recent adoption of the concept of **Integrated Water Resource Management (IWRM)** by various international organizations and governments. Essentially, it seeks to plan from the point of view of end users and entails demand side management rather than supply side management, which has been the practice so far. It also emphasizes the participation of the users in planning and execution of water projects.[1] The concept of IWRM is also a reminder for us

[1] A.P.Water vision

to factor in the **linkages** between different sectors and to note the points of potential contradictions and conflicts, so that they may be resolved. For instance, water demand by the fisheries industry would require water storage in reservoirs, but demands for irrigation would require releasing the water from reservoirs. Similarly, hydroelectric projects require a certain level of storage in reservoirs, but farmers might demand water for irrigation as has been happening in the case of the Srisailam Dam in AP. Recently the Prakasam Barrage was in the news because it is in need of repairs and this entails emptying the reservoir, but the thermal power station there has been stalling it as they need standing water for their cooling towers. A comprehensive understanding through IWRM, of the linkages between different sectors and sections of users in the whole basin will therefore, enable us to consider various **options** for development and employment, depending on the local conditions.



CHAPTER 2

GODAVARI – THE RIVER, LAND AND SOCIETY

a. The Journey

The river Godavari is the second largest river in India and it's journey runs across from the *Western Ghats* to the *Eastern Ghats.* It owes its greatness for its sanctity, picturesque scenery and utility to humanity. Starting with a trickle from the "lips of a cow" at Triambak, in the Western Ghats, near Nasik in Maharashtra, the width of the river grows till it is nearly 6.5 kms (4 miles) wide at Dhawaleshwaram. It enters Andhra Pradesh at Basar in Adilabad District, flows through the districts of Adilabad, Nizamabad, Karimnagar, Warangal, Khammam, West Godavari and East Godavari, before joining the sea. The river receives more than 75% of its water from its tributaries that join it in AP. The Godavari, after it descends from the Western Ghats, flows through the Telangana region of the Deccan plateau, and then begins to wind amongst the spurs of the Eastern Ghats, which gradually close on it, till it is forced to go through a picturesque gorge at *Papikonda,* which is 3 kms long and is as narrow as 200 or 300 metres. It branches off at Dhawaleswaram into the Goutami and the Vasishtha, each dividing into a number of canals that form the Godavari delta system. The river was navigable from the sea all the way inland for 847 kms up to Dummugudem, and steamboats used to ply regularly carrying passengers and cargo, whereas currently, the river is navigable for hardly 70 kms!!!

b. Physical Features

The Delta Region

The Godavari is the lowest of all the rivers in AP, coursing through a deep valley, at the level of 50 to 100 metres above MSL (Mean Sea Level) whereas the cultivable areas are in a height of 100 to 700 metres above MSL. Another feature of the Godavari River is that the variability in seasonal flows is very high at 1:12, whereas it is 1: 4 in the Krishna River. As a result, the delta areas suffered heavily between floods menace and severe droughts for centuries until the Sir Arthur Cotton Barrage tamed the Godavari. The delta region also suffered heavily from cyclones and tidal waves, which often swallowed many a coastal village, redefined the shorelines and reshaped the coastal landscapes. Thus both the river and the sea were very active and volatile and the people learnt to live between the two.

The river brought huge deposits of rich alluvium during the monsoon floods, which made possible a rich irrigated agriculture, while the sea was a source of huge reserves of fish and other

marine life forms. Canal irrigated agriculture through low diversion structures, called *anicut*, was the traditional practice in the region. Crafts like weaving, and metalworking were common and there were numerous communities of weavers spinning and weaving very fine fabric (up to 150 counts). These communities attracted European traders who started several textile trading companies in the region. Inland and marine fishing were well developed, and trade and transport, particularly in timber and bamboo, have been important from ancient times.

Although ancient rulers developed these canal systems, it was not until the construction of the Arthur Cotton Barrage that this region experienced widespread prosperity. The Barrage regulated the floodwaters and distributed it widely, ensuring two crops of paddy every year in the delta. Sir Arthur Cotton also realized that the economy in the delta critically depended on the forests in the upper reaches, and that the timber and bamboo trade had to be sustained by a good navigation facility around the year. Hence he conceived a bund at Dummugudem, which ensured navigation for manual and motorized passenger and cargo boats, as well as for floats of timber and bamboo down the river. No wonder then, the people of the delta hold Sir Arthur Cotton in great reverence. New crops like tobacco and chilli were also introduced in the catchment areas by settlers on the riverbanks who took advantage of the alluvial silt. These were grown after the floods subsided. The tobacco was cured with the fuel wood available in the forests nearby and the produce was transported on the Godavari River to the markets.

The Deccan Plateau/Telangana Region

The Kakatiya and the Muslim rulers who ruled the region, put in place a huge system of rainwater storage reservoirs, called inappropriately by the British as "tanks". Rainwater harvesting was a well-developed practice in Telangana culture for irrigation as well as for drinking water, with an "a*matha khana*" in most homes. Agri-biodiversity was the main survival strategy of the plateau people. Dry land crops, beedi leaf collection, sheep rearing, handloom weaving, toddy trade and other forest resources were the backbone of the economy in Telangana while wetland agriculture was restricted to the command areas of tanks. A well-developed silvi- pastural system led by the Gouda, Yadava and the Kuruma-Golla communities was as important, (if not more important), as agriculture. This region is also the home of the tribal kingdoms of the Gonds and Koyas of Gondwanaland and Bastar, respectively. Protected by the forests, which gave them food, fuel and fodder, they developed versatile strategies of livelihoods and a strong independence of spirit, fiercely resisting every attempt to exploit them. Till today they are the mainstay of militant movements as they resist their exploitation by a new economic and political elite in their own land.

The Telangana region of the Godavari basin is also the home of the *Dandakaranya* forests made famous by the epic Ramayana. The tributaries originating in Maharasthra state - Wardha, Penganga,


GODAVARI BASIN
SCALE
0 30 60 90 120 150 Kms.
NARMADA BASIN
MAHADEV HILLS
MAHANADI BASIN
TAPTI BASIN
SATMALA HILLS
AJANTA HILL RANGE
WESTERN GHATS
BALAGHAT RANGE
KRISHNA BASIN
EASTERN GHATS
BAY OF BENGAL
CHINDWARA
SEONI
BALAGHAT
BHANDARA
NAGAPUR
WARDHA
YEOTMAL
CHANDRAPUR
GADCHIROLI
NASIK
AURANGABAD
ADILABAD
PARBHANI
NANDED
SRIRAMSAGAR
OSMANABAD
LATHUR
NIZAMABAD
KARIMNAGAR
WARANGAL
BIDAR
HYDERABAD
JAGDALPUR
INDRAMPALLI PROJECT
Pallampalli Project
BHADRACHALAM
POLAVARAM
RAJAHMANDRY
KAKINADA
REFERENCE
Basin Boundary
Catchment Boundary
State Boundary
River
SETTLEMENT
Killari
LENGTH OF GODAVARI = 1765 Kms.
AREA OF THE BASIN = 313.2 lakh Hectares
TOTAL YIELD = 3000 TMC ft.
PER CAPITA AVAILABILITY OF WATER IN THE BASIN = 1139 Cu m
Prepared by Remote Sensing Applications, Hyderabad

Wainganga and Pranahita flow through its teak forests. The Indravati, originating in Kalahandi district of Orissa, flows through the Chattisgarh soft wood forests that are full of mango, jackfruit and a bewildering variety of other trees. The Sileru and Matsyagadda join the Sabari river in these forests where bamboo, beedi leaf and mahua trees are abundant. 10 out of the 20 wild life sanctuaries in AP are in the Godavari basin.

The Dandakaranya region ranges from the tropical moist deciduous areas in the Bastar and Eastern Gadchiroli ranges, to the tropical dry deciduous areas towards the West, i.e. Western Gadchiroli and Adilabad. The regions near the river Indravati in Bastar sometimes show up littoral swamps. The annual rainfall is about 1,500 mm, while the western parts are drier. The soil changes from red in the east (derived from the Precambrian era) to black cotton soil in the west.

The Dandakaranya districts are perhaps the last vestiges of good forests in Central India. But they seem to be succumbing to the onslaughts of 'modernization' if human wisdom is not capable of rising above short-term 'development' goals. A large number of distinct cultural groups continue to maintain their independence with a tantalizing mix of mythology, knowledge systems and cultural practices – a togetherness that allowed them to live in a reasonable harmony with their environment and with each other. It would also be necessary to mention here that one is not suggesting a "museum approach" when such communities become the unwitting and unwilling victims of development. Things do change with time, but they do change for the better when all the stakeholders involved make rational choices together, about the changes that best suit them.

The Great Transformation

Four great modern interventions have taken place since the last 100 odd years in the Godavari basin. Firstly, the barrage built by Sir Arthur Cotton, led to widespread irrigation (and subsequently the green revolution). Second, it made possible year round inland navigation up to 847 kms; while thirdly, coal mining based on huge coal deposits increased. Lastly, paper mills were established took advantage of the bamboo forests of Bastar.* These interventions generated a huge surplus that was not re-invested within the region. The entrepreneurial classes migrated out and invested in cinema and real estate, rather than in the rejuvenation of natural resources, nor did they invest in education or coal-based industrialization.

The more recent developments over the last fifty years in the Telangana region include irrigation projects like the Nizam Sagar Project in 1931, the Sri Ram Sagar Project built in the 1960s, thermal

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* Bastar is a colloquial of "Van- sthar, which roughly translates as "region of bamboo". Similarly, the name of the tributary 'Wainganga' is a colloquial form of '*Venu (bamboo) ganga.*

power projects like the Kothagudem Thermal Power Station and the National Thermal Power Station at Ramagundam. Five hydroelectric projects have also come up on the Sileru river, which is a tributary of Sabari. As mentioned earlier, canal irrigation through gravity flow could not be constructed because of resource and terrain constraints, and there are hardly any projects between Nizamsagar and Dhawaleswaram. Since canal waters could not reach large parts of Telangana and Rayalseema, the government provided electricity at concessional rates, which enabled huge investments in open wells, tube wells and bore wells by farmers. In the textile sector too, power looms have replaced the handlooms.

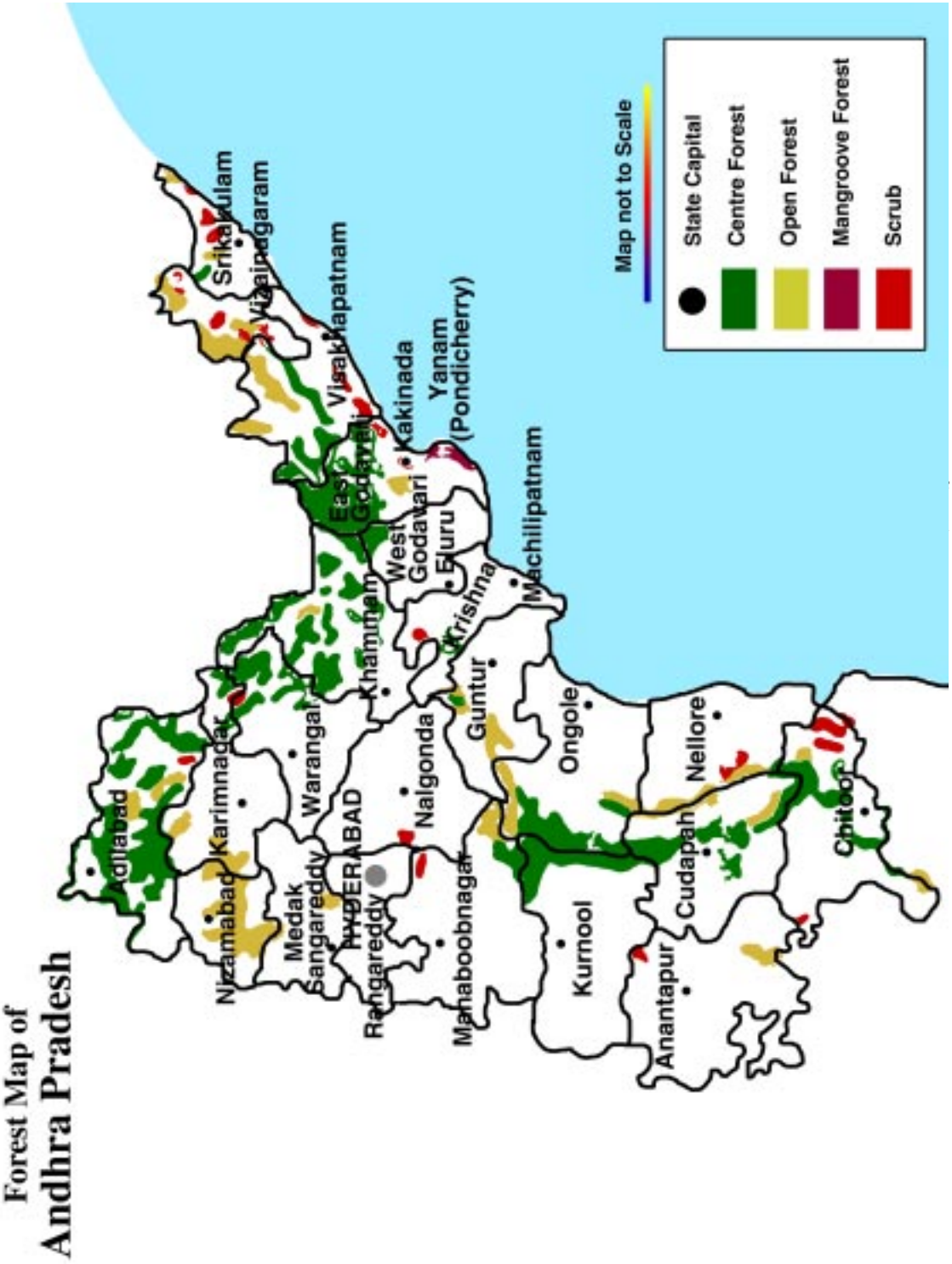
The expectations and aspirations of the Telangana people have increased as a result of the Telangana movement in the 1940s against the feudal system under the Nizam's government and due to the process of democratic electoral politics since Independence. Governments have responded by adopting a welfare state model, and by taking a leading role in developmental initiatives. This has vastly expanded the presence of government administration in every nook and corner of public life. The changed State policies on forests brought hordes of settlers who became a torment in the lives of the local communities. Some looked for flora, some for fauna, some for minerals, some for all of the previously mentioned, including a few with a taste for the flesh! The timber contractors, liquor dealers, coal miners and poachers among others, along with their not-so-white-collared retinues, now hopelessly outnumber the Madias, Gonds, Kolams and Bhils.

Extremism

Almost universally, the youth in this region are filled with confusion and apprehension. The exceptionally lucky amongst them reach the matriculate level and it takes four times as much luck for them to pass through, as the results of less than 25% passes testify. All this is the result of a highly visible educational effort with scholarships and free hostel facilities.

The rite of passage for those passing the matriculate level includes undergoing a very trying period of "watching and waiting" for some salaried job somewhere. Only 5-10% make it, while the others watch and wait and have their hopes dry up. It has been the youth of this kind that has stood behind the 'Annalu' (CP-ML extremists), and perhaps for very valid reasons. How can a society afford to sink its most potent part into the oblivion of unemployment and make permanent villains out of them? It has to pay the price for it.

No society can afford an extravaganza of this scale. The white-collar dream has been heavily oversubscribed to tragic limits. This cream of human society should find its ways into socially useful, economically gainful and ecologically sustainable work channels. No doubt there is no readymade answer to this. It needs a massive intellectual effort and clarity of purpose besides patience, a virtue that is inherently necessary for good education. Contractors, traders, industrialists, *patidars*, landlords,


Forest Map of
Andhra Pradesh
Map not to Scale
State Capital
Centre Forest
Open Forest
Mangroove Forest
Scrub
Srikakulam
Vizianagaram
Visakhapatnam
East Godavari
Kakinada
Yanam (Pondicherry)
West Godavari
Eluru
Krishna
Machilipatnam
Khammam
Guntur
Ongole
Nellore
Chittoor
Adilabad
Karimnagar
Warangal
Nalgonda
HYDERABAD
Rangareddy
Medak
Sangareddy
Nizamabad
Mahaboobnagar
Kurnool
Cudapah
Anantapur

the bureaucracy and perhaps, the whole of the development blinded elite, seem to be ranged against the airs, waters and the land. One has to accept that it is not a blakc and white situation. There are a large number of indigenous people particularly the 'developed' among them who would not mind joining the gang. Non-concern is not the monopoly of outsiders as one can also see a tribal group felling an "Amla" tree for collecting its fruit 'effortlessly'.[1]

"Educated Chenchus, mainly employed in government service, could provide thier community with some leadership. But th emembers of this Chenchu elite do not identify with their illiterate fellow tribesmend and are not inclined to act as their spokesmen or to provide any kind of leadeship. Like many other educated tribesmen, they are more interested in as close as possible an assimiliation to the caste Hinus with whom they have to work in their employment. Even should any of them have political ambitions, the Chenchu communities, whose loyalty and support they could probably gain, are too small in numbers to provide sufficient votes even in local elections."[2]

The tragedy of errors has often been compounded by successive state administrations treating these district postings as punishment posts. Thus, except for a few shining examples (perhaps a result of some errors in witch hunting within the administrations), the bureaucracy scarcely rose up to the demands of its job. The resulting apathy and alienation of the local communities has paved the way for a strong Naxalite presence in almost the whole of *Dandakaranya* for more than a decade now. But a severe disillusionment seems to have set in during the last decade, both amongst the people and the extremists themselves. Today, the population of non-locals is many times over that of the indigenous communities. In spite of their strong numerical majority, most of the settlers continue to look at this region from the mindset of an outsider or a “Non-Resident”. Under the extremist threat, they have shared some of their wealth, but dreams cannot be shared at the point of a gun. The system of middlemen (*pyravikars*) or brokers, supported by the political elite, gives little scope for the empowerment of people at the grassroots level. This has also contributed to the growing movement for a separate Telangana state.

Almost 80% of the Godavari’s catchment area and 70% of the cultivable area, is in the Telangana region, and only 20% of the catchment and 30% of cultivable area is in the delta region. The Telangana leadership therefore argues that this entitles them to more of the river waters. With the revival of the Telangana movement for separate statehood and a loud demand for water to Telangana areas in the last few years, there has been a renewed interest in projects on the Godavari. Several schemes have been proposed and most of them are a mix of lift and storage schemes. Any project will have its pros and cons and we will come discuss them later in detail. But let us now turn to the problems that have accompanied the great transformation of the land, society and the river.

---

[1] Vinoo Kaley et.al.

[2] Christoph Von Furer-Haimendorf

Chapter 3

DAMNED BY DEVELOPMENT AND POLITICS

a. Degradation of Forests

Forest degradation has been mainly due to unsustainable management of bamboo and other forests. The term for continuation of lineage is "*vamsam*", the name for Bamboo, because it does not easily die once it is planted. But we humans in India have been able to successfully destroy even such a species! Interestingly India is the only country in the world, which uses bamboo as a feedstock for paper manufacture on this scale. The Bamboo country of China uses only 10% of its bamboo for paper manufacture, whereas India apportions over 2/3 of its extraction for this use[1]. From the 1990s, the bamboo forests began to disappear in Dandakaranya, resulting in paper mills switching over to farm plantations of subabul, casuarinas and eucalyptus. Logging divisions of the Forest Department and the Government Saw Mills have been closed since the last twenty years. Beedi leaf collection is now the only source of income to the department and the people.

Due to deforestation, flash floods have also become common. The silt load in Godavari has always been heavy, but due to deforestation, silt has given way to sand and gravel in the riverbed. This has impeded river transport for hundreds of kilometres, and from 847 kms since the days of Arthur Cotton, it has come down to hardly 70 kms today! Since 1988, the Central Water Commission and the Ministry of Environment and Forests have pointed out the degradation, recommending to first stabilizing the catchment area before requesting sanctions for any project.

b. Mining and Industrialization

Mining has displaced the local communities. Open cast mining has been proposed and implemented, and this will cast a death blow to the water resources of the region, for water will rush into the mines and the lands above the mines will be drained of water. Although coal is available in plenty, coal based industries have not come up in the region. Education, particularly in industrial and vocational skills, has also not developed[2]. Though the Supreme Court in 1997 directed the allotment of 20% of the budget and shares in the mining companies and industries for the displaced tribals, nobody is at the least, aware of these orders[3] and proposals for 15 more open cast mines are being cleared. Although coal mining is more than 100 years old, a mining school was opened only two

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[1] Vinoo Kaley et. al. 1993

[2] Appendix 2 p.

[3] Appendix 2 p.

decades ago in Kothagudem, largely attracting students from outside Telangana. Similarly, although there are several paper mills in the basin, there are no educational institutions or courses on paper technology. The region's economy therefore remains largely agricultural and forest-based.

c. Displaced Communities

With the establishment of the heavy water plant in Manuguru as many as 328 households have lost their agricultural lands measuring 500.05 acres. Of the 328 families, 122 are scheduled tribes and most of them are Koyas.

The Heavy Water Plant Project at Manuguru has identified a good number of technical jobs trades and estimated the number of vacancies in each trade job. Though a training programme in trades and skills for educated tribals among displaced families was organized, it succeeded in sending only 4 S.T. candidates for training at the I.T.I. in Kothagudem, while the rest of the students were outsiders. The government even had a proposal for illiterate tribals from displaced families to provide them employment in horticulture and afforestation in the proposed green belts in and around the region. But even this has not materialized. Giving preference to tribal applicants in employment as a matter of policy, has never been implemented on the pretext that most of the tribals are illiterates.

d. Degradation of the River and Tanks

Both the SRSP and Nizam Sagar Reservoirs are heavily silted up and their reservoir capacities have been drastically reduced, forcing the government to come up with a new scheme, called the Flood Flow Canal, to service the un-served command areas under these reservoirs. The Godavari Barrage is also blocked by sand dunes, thereby increasing flood levels. Since nowadays paddy varieties are of a short type, they are not able to withstand the floods. Dredging of silt is not possible, while blasting may damage the barrage. Unless the dams are designed to scour larger sand particles, it may well become that these reservoirs will store sand rather than water in the future.

Sand casting continues unabated at the estuary even though not enough sand is reaching it, trapped as it is in the reservoirs. As a result, the sea has been coming inland. A study of the district gazetteer shows that even in recent history, tidal waves and cyclones have swallowed up several villages or/and the rivers have deposited fresh sediment along the mouths and have created new lands not in existence before. A recent study by the Andhra University has shown that the sea has swallowed up about 1,800 hectares of land in the estuary and attributed it to large-scale construction of dams[1]. What will happen after all the projects come up?

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[1] Hemamalini B and Nageswara Rao K, 2004, Appendix 3, p. 56: T V Jayan, Down To Earth

The tank system has also declined drastically and the area under tank irrigation has come down steeply, so that whatever has been gained by the increase in the number of open wells has been nullified. Indiscriminate bore well drilling without a functioning tank system has resulted in ground water tables falling, and there is a palpable ground water crisis today. Dry crop cultivation has decreased and instead, the cultivation of water-intensive commercial crops such as sunflower and cotton have increased. Child workers have also increased as a result of these crops as they are employed for picking cotton and sunflower seeds. Pastures have also come down due to the extension of cultivation into waste or common lands and the degradation of forestlands.

e. Impact on the Population

Jalleru

A medium irrigation project has been taken up to harness water for irrigation purposes from the Jalleru rivulet which drains into Yerrakalava near Vegavaram of Polavaram taluk in West Godavari district. The estimated command area of this project is 3,500 acres and the efforts are being made to increase the command area up to 4,000 acres. The Jalleru rivulet originates in the Eastern ghats and flows in a Southern direction till Aliveru village where the reservoir is constructed and drains into Yerrakalva after flowing 25kms distance down stream from the reservoir site. The scheme was inaugurated on 11th August 1976.

The catchment area of the reservoir is spread over 48.20 sq.kms. The water spread submerges Aliveru, a revenue village and its hamlets of Yerrayagudem, Lankapakala and Thummagudem. The total geographical area of these settlements is 1.97 square miles with total population of 680 persons of which 328 are males while 352 are females. Of the total population, 99.73% i.e. 651 are scheduled tribes. Among them, 314 are males and 337 are females, while the rest of the population are non-tribal communities.

Consequent upon the acquisition of agricultural land and house sites for the project, the inhabitants have been shown alternative accommodation at Marlagudem, abetting the road leading from Jangareddigudem to Buttayagudem. The tribal inhabitants have rejected the site because of the long distances involved. The revenue department is on the look out for an alternative accommodation near the dam site. The total number of displaced households is 118, of which 69 belong to Konda Reddies, 48 to Koyas and one non-tribal household. 78 land owning house holds have been compensated for their loss while the other 40 households who have no agricultural lands are being considered for compensation by way of providing house sites and allotting land.

Kovvada Kalva Reservoir

Kovvada Kalva is a stream having its origin in Papi hills at an altitude of +600 Mts. in Chintapalli Reserved Forest in West Godavari District of Andhra Pradesh. A medium irrigation scheme for formation of reservoir was proposed near Lakshminarayanadevipeta village of Polavaram mandal of West Godavari district across Kovvadakalva.

The two tribal habitations apart, an extent of 286.27 hectares, including patta land to the extent of 208 hectares, 39 hectares of forest land and a similar extent of government waste land, was estimated to be submerged on account of the reservoir. The stream has its origin in the Papi hills at an altitude of +600 metres in Chintapalli reserved forest in West Godavari district, and flows southwards from the origin and is called `Peddavagu' up to Lakkapalli village limits and is named Kovvada Kalva downstream. The proposed reservoir is intended to supply water for irrigation on 7179 hectares in nine upland villages in Gopalapuram mandal, besides provision of drinking water to a population of 35,000 in 15 villages en route the canals.

Mr. K Lakshmi Reddy, resident of Reddygudem and Vice-president of Rajanagaram gram panchayat under which his habitation falls, said that proposed reservoir was in no way beneficial for the tribals. Instead, it poses a serious threat to our lives, he said. He apprehended that over 250 members of the Kondareddy tribe from the habitation would be isolated from their fellow tribals living in forests in case of their relocation in the plains."[1] The Kovvada Kalva brings devasting floods to the uplands and the reservoir will be a boon to them, but devastating to the Kondareddy tribals.

Surampalem and Bhupathipalem Reservoirs

Burada Kalva is a seasonal stream flowing through the tribal areas of East Godavari. A reservoir was constructed at Surampalem village while the command area is in the plains. To feed this reservoir, the government has taken up the construction of Bhupathipalem Reservoir across the Seethapally stream. Now politicians of the plains areas are planning to get water from Pamuleru stream through Bhupathipalem and Surampalem reservoirs. This is nothing but river linking, siphoning off all the waters from the tribal areas. For the first time in Andhra Pradesh, an NGO was involved in approving the rehabilitation plan, the High Court took up monitoring the progress of rehabilitation. But since both interventions were weak, rehabilitation is still incomplete[2].

The local communities in the command area hold that the responsibility of rehabilitating the displaced fellow tribals in the reservoir areas is vested with the government. They are not ready to

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[1] Tribals concerned over displacement threat, The Hindu, 22nd December 2001

[2] Appendix 4 p. High Court order in W.P. No. 8476/ 2001, dt. 02nd April 2004, Sarapu Pothuraju Vs Govt. of A.P.

The areas around Rampachodavaram, where the Bhupathipalem reservoir work is progressing have never been under the influence of the Maoist groups. A Naxalite "group" from a far off area extended sympathy through press statements to the protests of the villagers who were affected. The police highlighted the press statements in order to increase their influence over the local communities, while the media senselessly sensationalized the entire episode without even checking the ground realities.

The government entered into agreement with contractors for the construction of the Bhupathipalem reservoir in February 2004. The work started on 18-11-2004 and Bhupathipalem village was the first village to be displaced. It has not been rehabilitated till date. The Kothapakala village, which was forced to agree for rehabilitation through a local "group", is also yet to be rehabilitated. The district administration entered into an agreement with Gandhinagaram village in the month of June 2005, promising land in the command area along with fishing rights in the impounded waters. But so far these promises have remained on paper. It is reported that government is considering giving fishing rights to the displaced families[1]. So far, this promise has not been confirmed. Another step taken for rehabilitating tribals near their villages is dereserving certaing peripheral lands of unclassified forests.[2]

The Musurumilli Project

The Musurumilli project is the second project on the Seethapalli vagu (the first is the Bhupathipalem reservoir), a tributary of the Godavari, and is designed to irrigate 22,643 acres of land in Rampachodavaram, Devipatnam, Gangavaram, Gokavaram and Korukonda mandals and also provide drinking water to people in five mandals. The 4 villages to be submerged are Chinna barangi, Komavaram, Seethapally and Musurumilli; these will submerge fully and three villages, I.Polavaram, Jagarampalli and Tamarapally in Rampachodavaram Mandal, will submerge partially after the construction of the project.[3]

The Mathadi vagu Project

Farmers of Tamsi Mandal in Adilabad forced stopping of works on the Mathadi vagu medium irrigation project at the head works site near Waddadi village. They are demanding settlement of the issue of scale of compensation for the lands that face submergence.

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[1] As per the changes, only displaced families will be givern fishing rights in the Polavaram reservoir. The cultural identity of each tribal group will also be protected. A separate R&R survey for each affected village will be carried out and certain peripheral lands of reserved forests shall be de-reserved for tribal livilihood. - *Down to Earth, December 31, 2005, pp.16*

[2] It is resolved to complete the Forest Settlement in tribal areas involving an extent of twelve lakh hectares by posting Deputy Collectors and supporting staff exclusively for the work and if necessary by notifying Pos of ITDAs as Forest Settlement Officers. - *resolution in the minutes of the 96th meeting of A.P. Advisory Council held on 01-07-2005*

[3] Tame end to debate on Musurumilli minor irrigation project, The Hindu, 30th May 2005

They blocked the earth moving machinery at the project site in the morning even as revenue, irrigation and police officials made an effort to take up works with police protection. The officials failed to convince the villagers that the scale on offer at present was quite handsome. The government offered Rs. 1.3 lakh as compensation per acre of wetland and Rs. 1.1 lakh for each acre of dry land.

Special Deputy Collector (land acquisition) Satish Chandra and Rural Circle Inspector Mashooque sought the Collector's instructions on the imbroglio. In no uncertain terms they were told to give the villagers the Hobson's choice of an offer. The villagers were given time until Wednesday when the works would commence with police protection. The contentious issue of scale of compensation has been hanging fire since the last six months. At different stages of negotiations, the villagers kept on increasing scale of compensation to be given. When the government could not afford any further delay, it ordered start of work with police protection. The Rs. 50 crore Mathadi vagu project needs about 1200 acres of land to be acquired mainly in Tamsi Mandal.[1]

Migration

All these development activities have resulted in the impoverishment of forest communities who have migrated deeper into the forests and have contributed to the further degradation of the forests. On the other hand, the forest areas have been colonized by the plains people, who, with their new found prosperity thanks to the Barrage, have moved to the Agency areas, buying up or taking lands on lease from tribals and have settled down in cultivation. Fishing operations are also in the hands of settlers. When the tribal land rights movement was spreading in East and West Godavari and Khammam districts, a left party now demanding redesigning of the Polavaram dam, invoking the plight of tribals; organised a rally in support of the settlers[2].

It may not be an exaggeration to say that it has been an era of lost opportunities. Although democratic politics has brought about development of sorts, it has been mostly government driven and not society-driven, and therefore not dynamic and self-sustaining. The industries established by government have gradually become sick and it has gone on a spree of disinvestments from such industries. No wonder then, the region has been the home of separatist and violent militant movements.

The Tourism Department and private operators are running a number of launch trips on the Godavari across the Papi Hills. Media reports that the Papi Hills and the river Sabari would be submerged under Polavaram waters is impelling people to visit these places. But such tourism is in no way benefiting the tribals[3].

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[1] Farmers stall Mathadi vagu project work, No settlement yet on scale of compensation for land, The Hindu, Wednesday, December 14, 2005.

[2] Rally by tribals for non-tribals cause?, The Hindu March 03, 1999-Appendix 5, p. 56

[3] Appendix 8, p.58: Visit to Polavaram Dam site through Papi Hills

Chapter 4
EXISTING AND PROPOSED PROJECTS IN THE GODAVARI BASIN

It is in the background provided by the previous chapters that we should review the existing and proposed water projects in the Godavari Basin area. But before we do that, a rider is necessary. All projects are being planned on the assumption that a lot of water is going waste to the sea; and that once we ensure a minimum flow to the sea, the rest can be utilised for human consumption. This mindset has not changed even after irreversible consequences have been reported due to indiscriminate construction of storage bodies, destruction of catchment areas and contamination of the water itself with various kinds of pollutants.

In the recent years, successive governments and the intelligentsia are also strongly advocating inter-basin transfer of river waters on the assumption that certain basins have perennially surplus waters. The rivers and streams have been supporting various **kinds** and **quantums** of life forms and these would necessarily be disturbed if we disturb the water balance. In the long run the destruction of these life forms will kill the river and with it, the people who are dependent on the living river. This has to be kept in mind before any intervention is to be grounded**. We should intervene as little as possible, and in such a way that there is no resource degradation; if anything, development initiatives should be such that the resources are augmented and enriched.** Is such a development model possible? Even if it is not fully possible, a constant reminder of the above principle to ourselves will restrain us from doing things with far reaching and irreversible consequences.

Secondly, unless and until the water needs of the basin are served, there cannot be any question of transfer to other basins. In the case of the Godavari basin, only 680 TMC has been utilized , leaving another 800 TMC for further utilization, in the light of the Bachawat Tribunal award. Several projects have been in the anvil for many decades and people have become expectant. Therefore, there is popular resentment and resistance to the argument that some of the Godavari waters should go outside the state which will be substituted by Mahanadi water (in the Ganga-Cauvery link programme).

Rayalaseema, a relatively water-poor region, has been clamouring for a share in the Krishna and Godavari waters for many decades. The government of AP has been sympathetic and has tried to fulfill this demand somehow or the other and a few projects have already been grounded, such as

the K-C canal and the Telugu Ganga. The Government believes that Rayalaseema can be given water from Krishna or Godavari only by diverting Godavari water to the Krishna basin so that the water thus saved upstream can be diverted to Rayalaseema projects. But the Telugu Ganga experience shows up the fact that water has not been reaching Chennai as much as we have committed because it is diverted on the way by farmers and others who illegally pump out the water. AP has been able to release water to Chennai only in November only when Chennai gets its rain through the North East Monsoon.

a. The Godavari Waters Utilization Authority (GWUA)

GWUA was formed in 1999 with the then Chief Minister himself as the Chairman. Apart from 15 existing/ongoing projects, 11 major projects are contemplated. In addition to 28 existing/ ongoing medium projects, another 12 projects are proposed *(see Table 2)*. However, each government keeps changing its priorities and different projects receive different amounts of attention at different times. During the TDP regime of Chandrababu Naidu, the Telangana movement for a separate state revived and Mr. Naidu responded by giving a green signal to the Devadula project, which is also known as the Godavari Lift Irrigation Scheme. In the present regime, the Chief Minister Y. S. Rajasekhar Reddy, wants to complete all the water projects throughout the state on a war footing within a time frame of 5 years. Among the projects in the Godavari basin, he wants to take up Polavaram, Dummugudem and GLIS on a priority basis. The GLIS will bring some relief to the Telangana areas. The other two projects involve a transfer of Godavari water to the Krishna Basin, so that water can be saved in the upstream reservoirs and given to Rayalaseema. Thus 80 TMC of water is to be transferred from Polavaram to Krishna basin at the Prakasam Barrage located at Vijayawada, and 190 TMC to be transferred to Krishna basin from Dummugudem to Nagarjunasagar. The water thus saved in Krishna is to be diverted to Telangana and Rayalaseema projects. 35TMC of water tapped at Polavaram will also have to be shared with Maharashtra and Karnataka as per the Bachawat Committee agreement.

All these plans are big projects involving huge outlays, and therefore funding of the projects and the sources of funding, interest rates, who will pay for the project and how – all these questions become important along with concerns about who benefits and who loses, how to compensate these losses, and how should the benefits be shared. In the above sets of projects, a lot of questions have been raised. We will go over them in the following paragraphs briefly..

b. Indira Sagar (Polavaram) project

Project Affected Persons (PAPs) in the Polavaram project area number more than a lakh of people now residing in more than 200 villages. They are apprehensive that they too will got a raw deal. Many of them are tribals living in the forests with little skills other than collecting of forest produce

and trading Minor Forest Produce (MFP). The most important aspect is that they often do not have titles to their lands, partly because traditionally they do not own or recognize individual and private property, so that they keep farming on the basis of traditional community based hereditary rights. The government will insist on titles for giving compensation and it is feared that many will not get any compensation in the process.

Polavaram, a project constructed on the Godavari became a bone of contention between Andhra and Telangana areas, and attracts the attention of the intelligentsia and 'national' leaders. It is being suggested that the PAPs should be treated as "First Beneficiaries" and they should be settled in new areas to their satisfaction even before the reservoir construction begins, as they have tried to do in China. Many local (Leftist) groups spread over the area take conflicting stands on the issue. While one group demands 'scientific' rehabilitation, another group bargains for better rehabilitation. Yet another Left party demands lowering the height of the dam.

1. Water availability for the Polavaram Project is based on 1982 estimates. A lot of changes have taken place in the basin that needs to be taken into account. These may put the viability of projects in question. Recently an important leader of the ruling party remarked that there is hardly any water in the Godavari even for drinking water schemes, and wondered from where the water would come for irrigation projects.

2. It is being suggested that the PAPs should be treated as “First Beneficiaries” and that they should be settled in new areas to their satisfaction even before the reservoir construction begins, as they have tried to do in China. But given the manner in which our political process functions, is it possible?[1]

3. There are environmental problems too. Water run-off in the Godavari lasts only for 80 to 90 days in a year, normally from June to September while in the rest of the year, the evaporation is more than the runoff.[2] Out of these 80-90 days, about 20 days during July and August are high flood days, when no dam can store any of the water runoff. The delta region also receives heavy rainfall during the same period and since there is not much difference between the river and sea levels in the delta areas of both Krishna and Godavari, there are severe drainage problems and consequent flooding and water logging during this period. In fact, Sriramakrishnaiah warns of very heavy flooding in the whole of the delta areas of both Krishna and Godavari, if ever the proposed diversion of Godavari water to Krishna basin is to take place. The Krishna delta will receive additional water precisely when it does not

[1] Appendix 7, p. 56: R& R clearance of Indira Sagar (Polavaram) project

[2] Appendix 8, p. 56: Environmental clearance of Polavaram project by MoEF

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4. We have already mentioned the very high siltation rate in the dams across the river that has been accentuated by heavy deforestation. This will reduce the capacity of the reservoir in no time, which will accentuate the flooding menace.

The entire Polavaram exercise seems to be to make water available to the upper reaches of the Krishna basin (and to Rayalaseema). Yerneni Nagendranath and his associate farmers have been advocating that this can be done at a much lower cost and in a simple way by lifting 15 TMC of water from the Godavari and transporting it into Krishna basin through the Eluru canal. Their argument is that the Krishna basin has enough water most of the time; what it needs is protective irrigation when there is a water shortage during the years of low or delayed rainfall. Therefore there is no need to go in for a large project like Polavaram, which not only has a high cost but also has dubious benefits. A standby arrangement of 15 TMC will prevent flooding of the delta as well as provide water when necessary, they say..

c. Dummugudem

R. Vidyasagar Rao asks whether there would be enough water at Dummugudem if the Telangana projects come up. *Table 6* shows that if all the projects in Telangana are to come up, only 5.26 TMC will be available at Dummugudem, while the government is proposing to transfer 190 TMC! This is possible only if the government intends to shelve all the Telangana projects. *(Table 6 p39)*

d. Godavari Lift Irrigation Scheme (GLIS)

We are paraphrasing an article written by Bhiksham Gujja who has raised a set of questions in a recent article.

How much will farmers have to pay for electricity?

Will farmers really be able to grow high value crops?

Can they adopt new irrigation technologies?

Can they afford the costs?

What are the ecological impacts of the scheme?

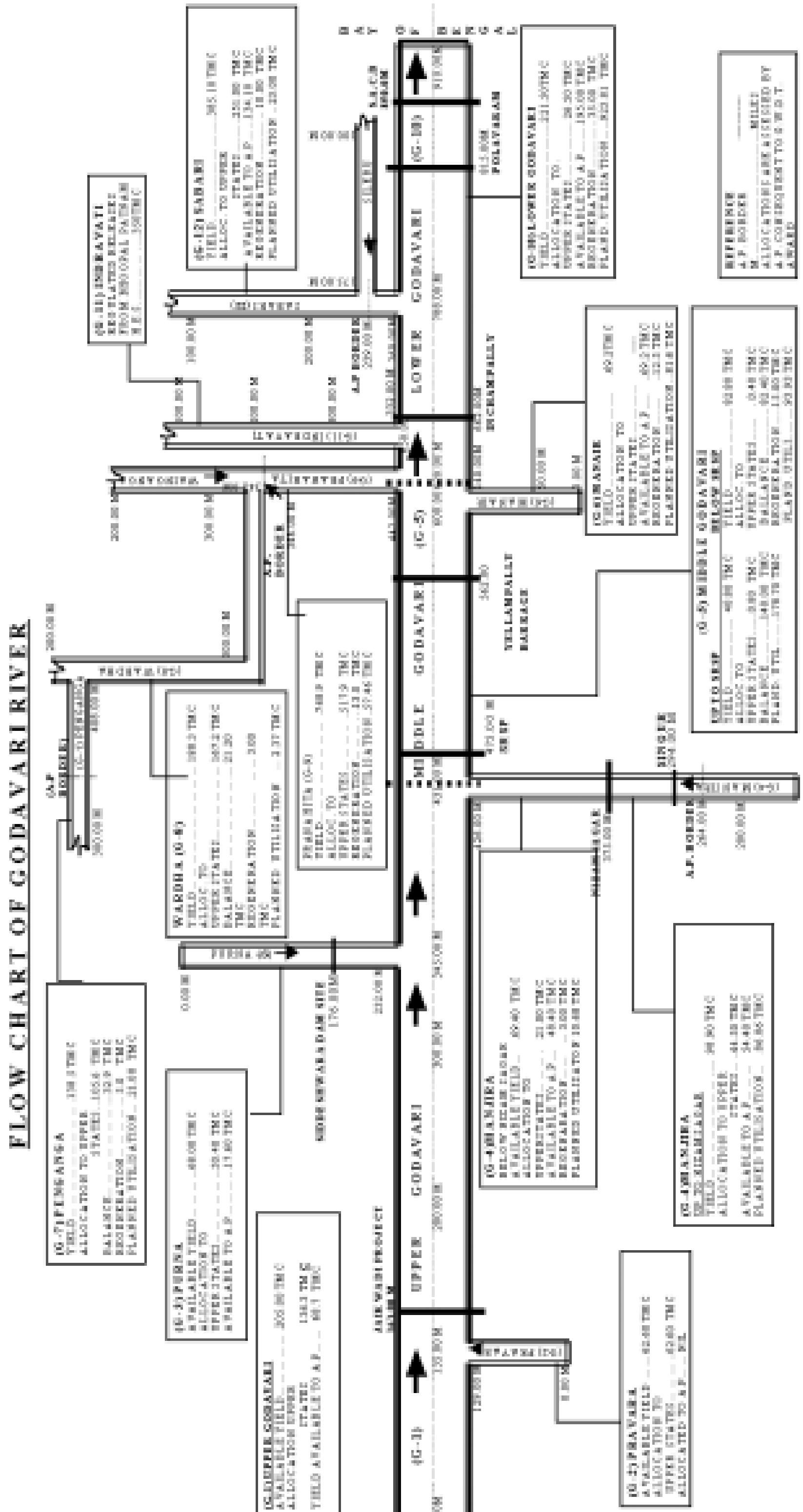
Is this the best option?

Finally, will it really meet the aspirations of the people who have waited so long for its benefits?

The GLIS proposes to lift 50 million cubic feet of water (about 1,400 million cubic metre) from Godavari to irrigate 350,000 acres (1 tmc-ft can irrigate 5,000-7,000 acres). The beneficiaries will be from 39 mandals in Warangal, Karimnagar, Medak and Nalgonda districts. Water to Telangana's farmers is the stated objective, but the GLIS does involve other components, such as two hydroelectric power generation plants down stream, drip irrigation equipment and construction of pipelines. The power plants will provide electricity to pump the water, and the pipelines will transport it. The scheme will cost Rs. 4,200 crore and the government is negotiating collaboration with Austria at an interest of 4.9% per annum.

The lifting of water from the river involves 11 stages, using existing tanks as online reservoirs. The information available varies, but it now appears the pumping station will be located near Gangaram village. Water will then be pumped in 11 stages using the existing tanks at Bhimanganapuram, Burakapet, Gangaram, Ghanapuram, Dharmasagar, Husnabad, Shanigarama, Ibrahimnagar and Hansapally. Between Gangaram, the first pumping station and Hansapalli the last reservoir, there is an elevation difference of about 440 meters. The horizontal distance of water transport is approximately 200 km. Water will be pumped between July and October for nearly 170 days at the rate of 110 cu.m. per second. Details such as the transport route, storage tanks and the distribution of water in each mandal are still unclear. According to recent reports, the first stage of pumping involving 3 tmc-ft (85 million cu.m.), which will probably cultivate 20,000-25,000 acres, will be started first. This should cater to four mandals in Warangal and one town in Karimnagar. This is the 'scaled down' version of the GLIS scheme, but the time schedule for this initial and the subsequent stages, is not yet clear.

Independent experts estimate the electricity needed to lift the waters to be around 410 MW, and consumption to be 1,650 MU (million kilowatt-hours). Costs at Rs. 2.08 per unit work out to Rs.


FLOW CHART OF GODAVARI RIVER
UPPER GODAVARI
MIDDLE GODAVARI
LOWER GODAVARI

6,864 per acre. Obviously, this is too high. Farmers in the command areas are getting canal water at around Rs. 400 per acre. Who will pay such exorbitant costs? Going by the increases in electricity rates, the cost for the GLIS in next five years will be much higher. It must be noted that private companies will supply electricity. If farmers are not asked to pay, then who will foot the bill?

The cost of the GLIS has been justified on the assumption that farmers will opt for higher technologies like drip irrigation, sprinkler irrigation and high value commercial crops. After three years of GLIS irrigation, farmers are expected to enjoy yields several times over. Paddy is expected to jump from one ton per acre to 2.5 tonnes. The government also expects farmers to grow tomatoes, onions and vegetables at 10 tonnes per acre. They are expected to make huge net profits per acre: Rs. 13,000 for paddy, Rs. 50,000 for vegetables and Rs. 12,000 for cotton. These projections are unreasonable! How would farmers, already burdened with loans, adopt high technologies? Even if they are given 50% subsidies, where are they going to get the rest of the money? We are talking here of farmers with expensive technologies, and few returns to pay electricity bills with. Experience from previous irrigation projects has shown that farmers at the head reaches, often grow highly water intensive crops and that adversely affects the tail enders of the *ayacut* who are then not in a position to grow irrigated dry crops for even a single season.

According to the scheme, water will be pumped from the Godavari during the monsoons, between July and October. If the monsoon has been good, the local tanks in this season would normally be filled with water, and there would be no place to store additional water. Existing tanks in the region do not have the capacity to store so much as 1 tmc-ft of water. Therefore, how are the authorities planning to store 50 tmc-ft?

Farmers would not need water in this season. They would need it only if the monsoons fail, but it follows that the river would not have sufficient water for pumping every day. During the lean year of 1987, water in the river for more than 36 days amounted to less than 50 tmc. It is also unclear as to how high sediment content in the water will be dealt with during the monsoons.

There are other issues. Will Godavari's water be given only to new irrigation areas or will it supplement existing irrigation? For example, water is supposed to be pumped into the Dharmasagar tank in Warangal and pumped out again. The tank has a command area for agriculture, but it is now used for drinking water and is being managed by the Warangal municipality. What institutional mechanisms have been thought out to replace this? Once the water starts flowing, would it create new conflicts instead of solving the crisis?

It is also being suggested that if each of the 5 lakh existing bore wells can irrigate one more acre through developing effective recharge mechanisms, 5 lakh acres can be irrigated, which is more than the acreage estimated under the GLIS. Therefore, can we seriously explore alternatives to the GLIS?

K. Sriramakrishnaiah's Proposal

A highly respected engineer who served the state of A.P from 1949 to 2002 was well known for his concern for the water-starved regions of Telangana and Rayalseema. He conceived projects on the Krishna and Godavari that would serve not only the particular basins, but also areas outside the basin. His contention is that the Ichampally and the Polavaram projects, including the transfer to Krishna basin, are not feasible and in fact, would be disastrous due to the high submergence of lands and displacement of people upstream, along with flooding and drainage problems in the delta. He prefers direct lifting of water from the river in the monsoon months of June to November without the need for any storage across the Godavari. He suggests two places for lifting, one near Kaleswaram, at the confluence of the Pranahitha and Godavari, and another near Burgampad, at the confluence of the Kinnerasani and Godavari. The first would involve a lift of 170m height and the second to a height of 110m. The two lefts are envisaged to merge in the Musi basin and will be lifted to + 432 MSL to cross over to the Krishna basin. A number of existing and new reservoirs will store the lifted waters. The project cost, including the power generation cost, was estimated by him to be Rs.20,000 crores and works out to Rs.33,000 per acre, if we assume it will benefit 60 lakh acres. This, he says, is less than the present day cost of Rs. 40,000 per acre in major irrigation projects. It has the advantage of reduced submergence with only 30,000 people getting affected, as against 2.0 lakh people under the Polavaram project, no submergence of forests and no interstate problems.[1]

T. Hanumantha Rao's Proposal

Hanumantha Rao's proposal envisages an ambitious plan; a mix of 3 reservoirs, 4 barrages and lifts at the stupendous cost of Rs. 60,000 crores! Reservoirs at Suraram, Kantapalli and Polavaram; Barrages at: Peddaballal, at the confluence of Kadem river, Yellampalli near Manchiryal, with the Edira and Dummugudem projects slated to produce 3,600 MW of power. The power can be used for lifting the water where necessary. About 2,800 MW of power will be needed to lift 450 TMC, to irrigate 45 lakh acres of Kharif crop and 22 lakh acres of Rabi crop. All this works out to Rs. 6,000 to 10,000 per crop per acre. Since the farmers will not be able to pay for it, the entire amount has to be made good by the government. These seven structures together would make the river navigable up to Manchiryal. Transport and trade through navigation would generate considerable revenues for the government as well as employment for people. Industries will get an assured supply of water and irrigation will thrive. Though this proposal is as of now, only at the level of ideas, T. Hanumantha Rao urges that a time bound topographic survey be taken up to assess the feasibility of the proposal.[2]

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[1] Sriramakrishnaiah K. - he vehemently opposed the Polavaram dam, See Appendix 9, p. 58

[2] Sri T. Hanumantha Rao

Redistribution of natural resources :

Four alternatives are presented before us :

1. No dam
2. Minimum submergence
3. No displacement of tribals
4. Alternatives - T. Hanumantha Rao suggested an alternative to the Pulichintala project but supported the Indira Sagar one. The Godavari Aikya Vedika came up with alternatives to the GLIS, but no political party supported it. Some other parties oppose Indira Sagar, but insist on Ichampally, which displaces much more tribal population. It must be remembered that the anti-dam movement started in 1983 against the construction of the Ichampally dam[1]. Much of the alternative protest is based on geo-politics and regional imbalances, not on the principles of sustainable water resources development, or looking out for the interests of tribals or minimum submergence theories.

Since political parties have their own strategies and justification for and against the dam, anti-dam activists should enable the poor to bargain for redistribution of resources. Activists who have been partners in ensuring incremental equity (share in the usufruct of regenerated resources) should go one step forward, demanding principal equity (share in the resource itself).

The problem with the communities threatened with displacement by big dams is that they are not ready to share their resources (which are anyway going to be submerged) with the poor in putting up a united fight. The South Maharashtra dam oustees' movement[2] were assured equal shares of water. Such gestures go a long way in forging an alliance against unsustainable development.

Under the Indira Sagar (Polavaram) dam, the total submergence area is a scheduled area, colonized by non-tribal settlers (222 settlements, 44,574 families out of which 21,109 only are Scheduled Tribes[3]. Besides which, possession of land is largely in the hands of settlers. Many of the affected mandals come under the scheduled area where it is known that a good position of land that ought to be legally in the possession of tribals has pased into the hands of non-tribals. In 33.33% of the settlements, (92 out of 276) non-tribals outnumber the tribals. Kunavaram and Kukkunuru mandals together account for 40% (30,000 acres) of the affected land. In Kunavaram, non-tribals account for 48.66% of population while in Kukkunuru, they account for 78.64%! Given that these areas are not the traditional habitat of non-tribals, we could well infer that ownership of land and other assets is correspondingly far more

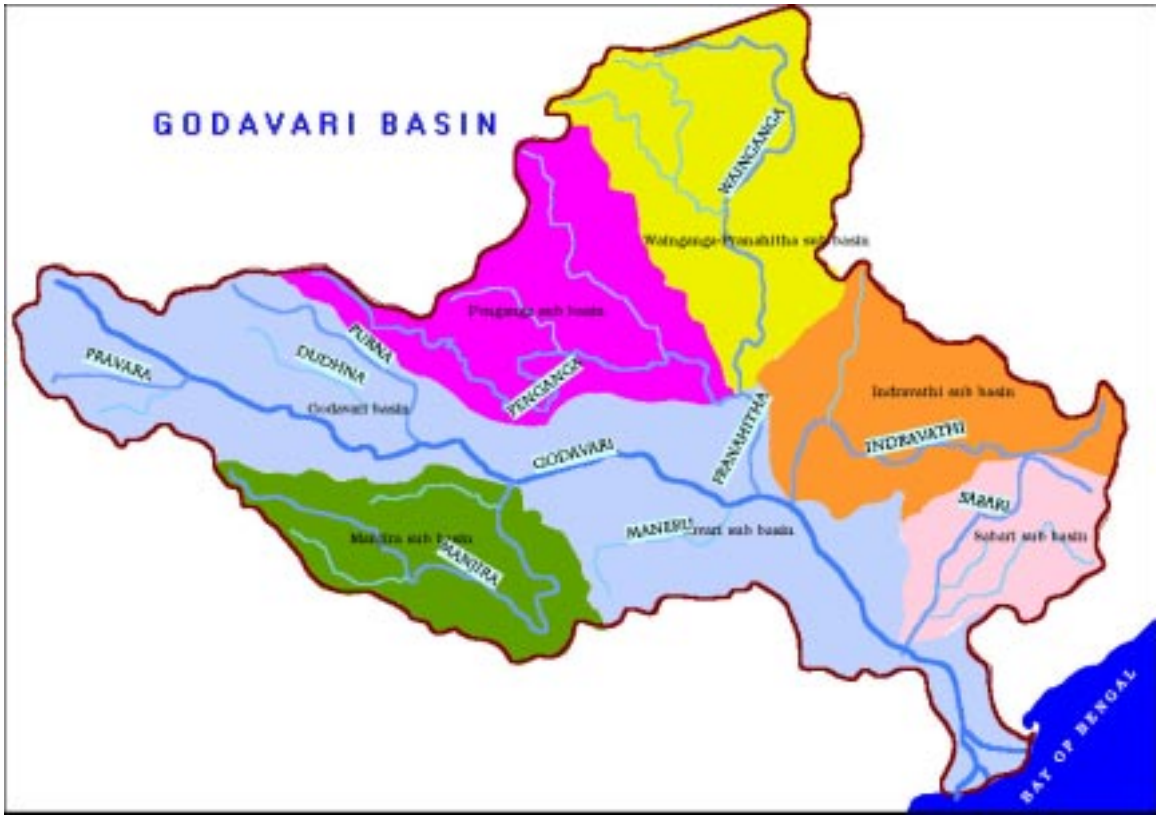
[1] Appendix 10, p. 63: Ichampally and Bhupalapatnam dams

[2] Appendix 11, p. 64 : Peoples' Movements, Anant Phadke, The Hindu Survey of the Environment, 2003

[3] Project affected persons economic rehabilitation plan of Indira Sagar (Polavaram) Project prepared by Agricultural Finance Corporation Ltd., Hyderabad, September, 2005; Appendix12, p. 65.

than that of tribals[1]. Groups opposing the dam are not persuading settlers, fishermen and tourist operators to share their resources or wealth with the resourceless, and with the tribals. With the lack of unity among all oustees, groups are seeking the support of courts and political parties, instead of putting up a formidable and united challenge to irrational development.

The redistribution of natural resource and wealth needs sustained and united struggles. During the freedom struggle, we observe that people, at every stage and level, not only defied the state, but also persuaded society to follow alternatives such as khadi and bhoodan. Liberation struggles like the Telangana peasant movement forced landlords to part with their resources. Civil society should force / motivate political parties to once again take up the distribution of resources and wealth.



[1] Pg. 34-35,46,79, Polavaram Project: Report on Resettlement and Rehabilitation of the Displaced, CESS, 1996, authored by Prof. N. Subba Reddy; Appendix 13, p. 65.

Chapter 5

AN ALTERNATIVE APPROACH TO WATER RESOURCES DEVELOPMENT

As we mentioned in the beginning, we need to have a **firm and sound philosophy** about how we should treat our natural resources. Ad hoc-ism won't do; we cannot allow our creditors, false patriots, unscrupulous politicians and vested interests to dictate what we should do with our rivers. What can be a sound philosophy in relation to natural resources? Natural resources have several functions other than serving the needs of human beings, many of which we don't even understand. For instance rivers keep the sea from swallowing the land by depositing sand and silt in the coastal belts. Construction of dams trap the silt in them or dams are not able to flush the silt up to the estuary.

It is worth exploring what will happen if Godavari does not flow to the present levels. A study from Andhra University has already shown that large-scale construction of dams is preventing sedimentation in the delta regions, in turn making it easier for the sea to advance and encroach on pristine ecosystems. The most devastating outcomes of this phenomenon are displacement of coastal communities and destruction of precious mangrove forests. While the catchment areas suffer from drought and sandcasting, the delta is suffering from cyclones, water logging and sea intrusion both on the ground and from underground.

No doubt **sustainable use** has to be the guiding principle. The rate of extraction/exploitation must be lower than that of regeneration. In the case of rivers, how does one determine what is sustainable use? One approach could be as follows: just as in the forest sector where the tiger has been identified as the apex species, so that presence of tigers indicates the health of the forest, we need to identify appropriate **apex species** in every river and river basin, and our developmental efforts should preserve them, at least not make them extinct.

Environment concerns are often counter-posed to employment generation and development indicators. It is true so far that development has been at the cost of environment. But degradation of the environment has gone so far that we need to make a 'U' turn and use the environment to generate employment on a very large scale.

In the Godavari basin this is not only eminently possible but immediately needed, given the level of deforestation and other ecological stresses. For instance, in the Bastar region, bamboo forests have been destroyed due to paper mills and the mills have now moved to captive plantations. But where have the tribal communities gone? They have been driven out of their resource base and have migrated deeper inside the forests, further contributing to the degradation of forests. If regeneration of bamboo is carried out on a large scale there would be not only employment, but it would give back the tribal communities their resource base and their livelihoods. Similarly Shore Area Development Authority can generate employment in regenerating mangrove forests and marine resources. Coconut is another neglected area where considerable employment can be generated. Agro-processing industries have been a neglected sector in this region.

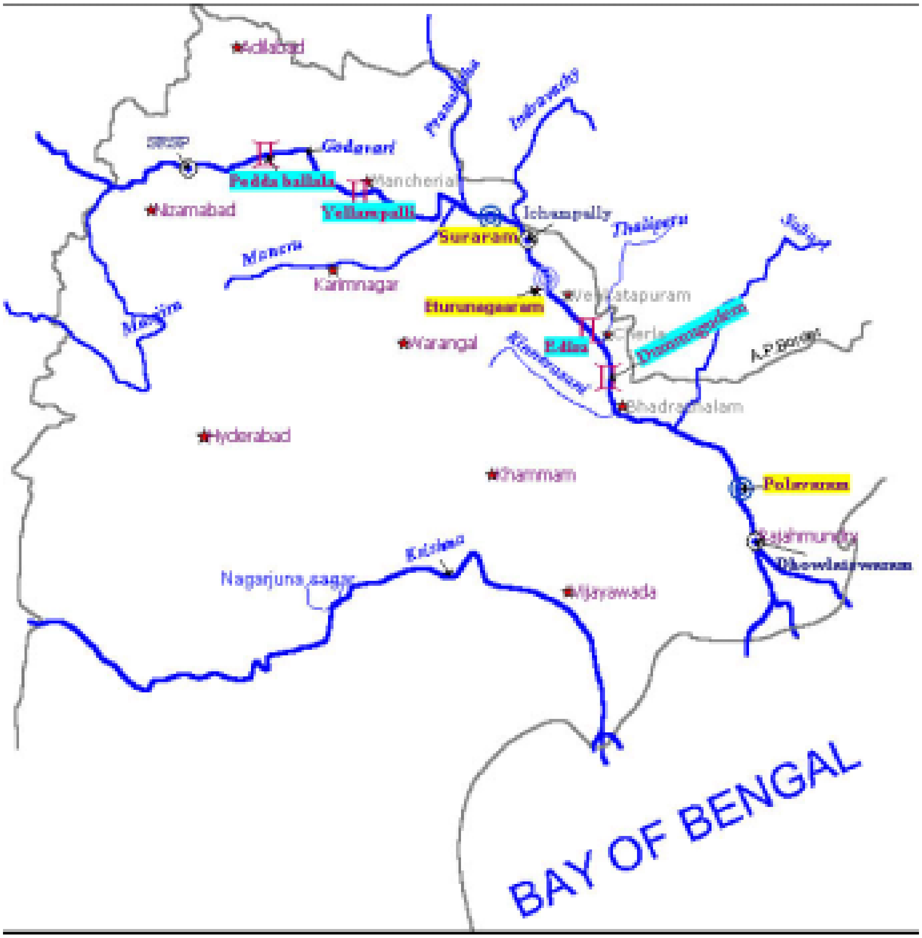
Policies should be such as to enable tribals to regenerate forests, fishermen to put back fish in the rivers, farmers to put back nutrients in the soils and refrain from poisoning the water and soil with chemical fertilizers and pesticides, industries to not release untreated effluents into the rivers. There can be no better way of generating employment and development at the same time.

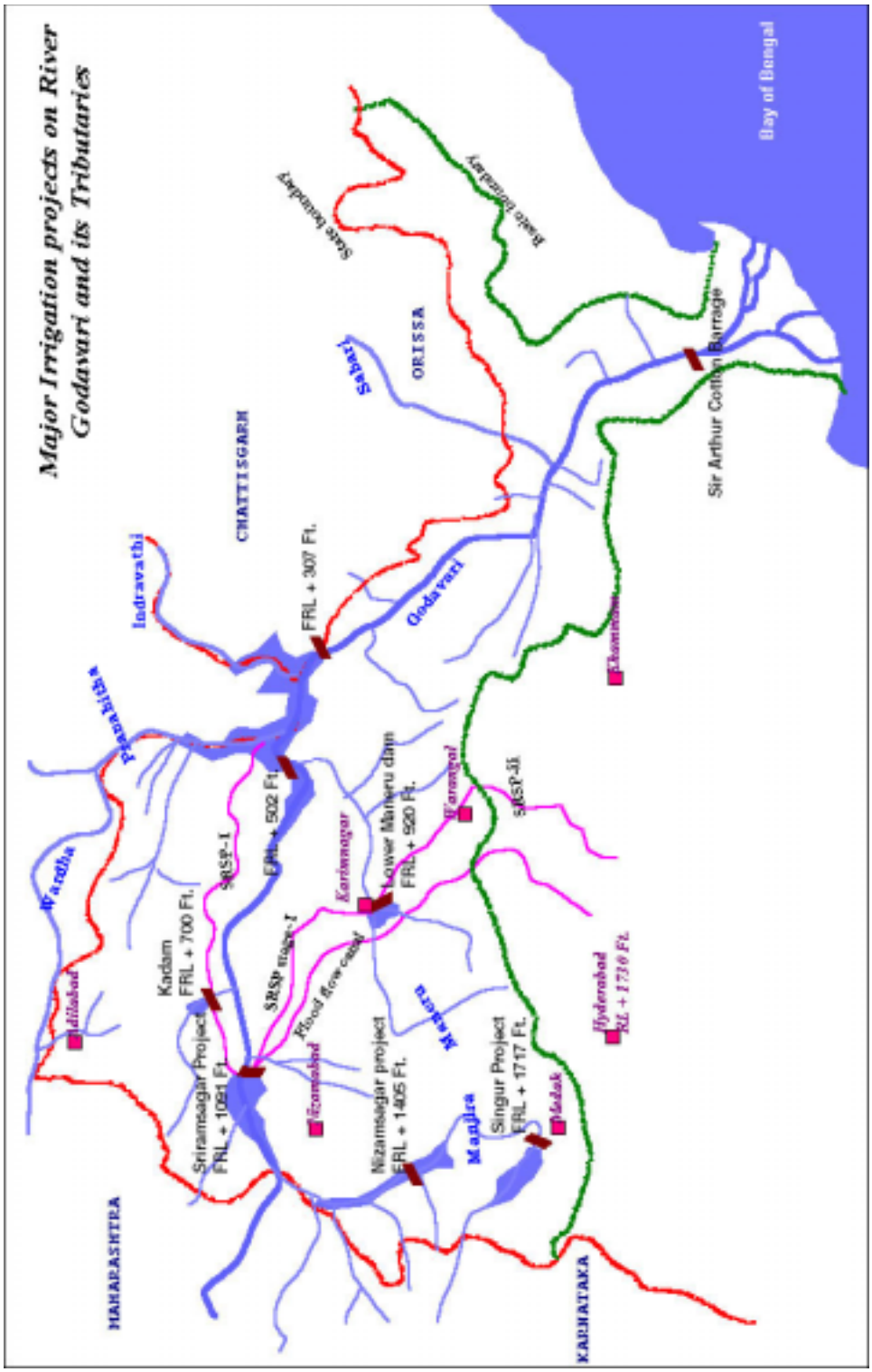
We need to plan from the needs of the end users in the basin, rather than on the basis of so called "surplus" water availability. As we observed earlier no basin could hold more water than it already does. Who are the end users in the Godavari basin and what are their water needs? How can they be satisfied? A fine-tuned and demand-based analysis and management is a far better approach because it allows us to weigh different options. The issue here is effective use of water that is already being used for agriculture. The goal of "more crop per drop" cannot be achieved unless there is price protection for dry crops. If water is made available, paddy continues to be the preferred crop because it gives steady yields and commands a steady price, unlike the other crops, such as millets, pulses and oil seeds, or the new crops like cotton, flowers, fruits and vegetables.

Telangana state may sooner or later become a reality, but if it follows the same policies as the previous governments, it will only accelerate the process of resource degradation and widespread impoverishment. Should we not start discussing how the new state will be different? We have to move towards a politics of green development based on the concept of "environment is employment". Instead of demanding the highest utilization of the Godavari waters, the demand should be sustainable utilization of Godavari waters based on large-scale eco-regeneration for long-term needs of the end user populations.

Though it may sound almost impossible, there is a need to bring different categories of stakeholders together onto a common platform and make the development process basin-oriented and participatory. Such an effort is already going on in the Cauvery basin and it can very well be initiated in the Godavari basin. Politically neutral organizations that enjoy credibility among the public need to initiate such a move.

In other words, the restoration of the basin's ecological health should be the first priority. The intervention in the river course, for the time being, should be demand-based and minimum. We should realise that the Godavari river is not in a position to bear further degradation that abets further displacement of the people and their rehabilitation / settlement in the catchment area. Today environment, development, society, and politics are at loggerheads with each other. There is a need to resolve these contradictions and harmonise them for an all-round well being. It is our fond hope that this will happen in the Godavari basin and that our efforts will contribute in this direction.


Godavari
Pedda ballala
Yellampalli
Nizamabad
Mancherial
Ichampally
Suraram
Thaliperu
Maneru
Karimnagar
Hurunagaram
Edira
Warangal
Bhadrachalam
Hyderabad
Khammam
Polavaram
Rajahmundry
Krishna
Nagarjuna sagar
Vijayawada
BAY OF BENGAL


Major Irrigation projects on River Godavari and its Tributaries
Bay of Bengal
Sir Arthur Cotton Barrage
Rajahmundry
Godavari
Sabari
ORISSA
CHATTISGARH
Indravathi
FRL + 307 Ft.
Pranahitha
Wardha
Kadam
FRL + 700 Ft.
Sriramsagar Project
FRL + 1091 Ft.
SRSP-I
FRL + 502 Ft.
SRSP stage-II
Flood flow canal
Karimnagar
Lower Maneru dam
FRL + 920 Ft.
Warangal
SRSP-III
Manjira
Nizamsagar project
FRL + 1405 Ft.
Singur Project
FRL + 1717 Ft.
Medak
Hyderabad
RL + 1736 Ft.
MAHARASHTRA
KARNATAKA

Tables

Table 1

Fact File - Godavari Basin	
Physical	
Elevation	1067 metres
Total length	1464 kms.
% of Total basin area in the Country	312,812 sq.kms. (9.5 % of geographical area)
Cultivable area in the basin	18.9 million hectares (9.7% of that of India)
Basin States and Share of Catchment Area	
Maharashtra	152,199 sq. km.
Andhra Pradesh	73,201 sq. km.
Madhya Pradesh	65,255 sq.km.
Orissa	17,752 sq.km.
Karnataka	4,405 sq. km.
Godavari in AP	
Catchment area in Telengana	79%
Cultivable area in Telengana	25.2 lakhs hectares (70%)
Catchment area in Coastal Andhra:	21%
Cultivable area in Coastal Andhra:	10.7 lakhs hectares
Water Position in Godavari	
Average Rainfall	1000mm
Western side	South West monsoon
Eastern side	South West and North East monsoon
Average annual surface water	110.5 cu.km.
Utilizable water	76.3 cu.km.
Present Use of surface water in the basin:	41 cu.km.
Tributaries and their contribution	
Sabari	10%
Pranahitha	40%
Indravati	20%

Table 2

Net Area Sown & Area Under Tank Irrigation in Telangana: Progress from 1956-1988

(Area in Hectares)

Sl. No.	*Year*	*Net Area Sown*	*% increase (+) or decrease (-) from 1956*	*Area irrigated by tanks*	*% increase(+) or decrease (-) from 1956*
1.	1956	46,57,282		4,47,236	
2.	1961	42,62,380	-8.48	4,11,494	-7.1
3.	1971	49,50,511	6.3	4,48,368	0.25
4.	1981	45,24,414	-2.85	3,49,730	-21.801
5.	1991	43,66,017	-6.25	3,92,212	-12.3
6.	1997	40,98,062	-12.01	2,84,919	-36.3
7.	1998	36,21,754	-21.77	1,07,715	-75.92

Source: K. Jayashankar, 2003.

Table 3

Dryland crops

(Area in Hectares)

	1981-84	*1990-93*	*% increase (+) or decrease (-)*
Jowar	13,63,139	7,97,864	
Sajja	1,94,863	64,398	
Maize	3,17,098	2,55,863	

Source: Simhadri, Visweswara Rao, 1998

Table 4

Districts With Scheduled Areas in the Godavari Basin

Sl.No.	Name of the District	Sl.No.	Name of the District
	Andhra Pradesh		**Maharashtra**
1	Adilabad	1	Ahmednagar
2	East Godavari	2	Aurangabad
3	Karimnagar	3	Bhandara
4	Khammam	4	Chanda
5	Nizamabad	5	Gadchiroli
6	Visakhapatnam	6	Nagpur
7	Warangal	7	Nanded
8	West Godavari	8	Nasik
		9	Osmanabad
	Madhya Pradesh	10	Parbhani
1	Chindwara	11	Wardha
2	Seoni	12	Yavatmal
3	Balaghat		
			Karnataka
		1	Bidar (non-scheduled)
	Chattisgarh		**Orissa**
1	Bastar	1	Koraput
		2	Gajapathi
		3	Malkangiri
		4	Nowrangapur
		5	Kalahandi

Source: www.

Table 5

Wildlife Sanctuaries in the Godavari Basin

Sl. No.	Name	District	Area (in ha.)	Date of notification
		ANDHRA PRADESH		
1	Coringa	East Godavari	23600	05/07/1978
2	Eturunaagaram	Warangal	80600	11/10/1973
3	Kawal	Adilabad	89300	08/11/1965
4	Kinnerasani	Khammam	65600	24/01/1977
5	Lanjamadugu (Sivvaram)	Adilabad & Karimnagar	3700	20/05/1978
6	Manjira	Medak	2000	20/05/1978
7	Pakhal	Warangal	87900	04/03/1952
8	Papikonda	E. & W. Godavari & Khammam	59100	05/07/1978
9	Pocharam	Medak & Nizamabad	13000	09/02/1952
10	Pranahitha	Adilabad	13600	
		CHATTISGARH		
1	Bhairamgarh	Bastar	1389	01/08/1983
2	Pamed	Bastar	26212	11/03/1983
3	Indravathi	Bastar	125837.2	17/02/1982
4	Kangerghati	Bastar	20000	27/07/1982
		MADHYA PRADESH		

1	Pench	Seoni	11847.3	30/09/1977
2	Kanha	Mandla & Balaghat	94000	21-05-55, 13-05-64, 15-12-70
3	Pench (Priyadarshii) park	Seoni & Chhindwara	29285.7	01/03/1983
Sl. No.	**Name**	**District**	**Area (in ha.)**	**Date of notification**
		MAHARASHTRA		
1	Andhrari	Chandrapur	50927	25/02/1986
2	Bhamragarh	Gadchiroli		
3	Bor game	Wardha & Nagpur	6110	27/11/1970
4	Chaprala	Gadchiroli	13478	25/02/1986
5	Deulgaon- Rahekuri blackbuck	Ahmednagar	217	29/02/1980
6	Gautala autramghat	Aurangabad & Jalgaon	26061	25/02/1986
7	Jayakwadi bird	Aurangabad & Ahmednagar	34105	10/10/1986
8	Kalsubai Harishchandragadh	Ahmednagar	36181	25/02/1986
9	Nagzira	Bhandara	15281	06/08/1969
10	Nandur madhmeshwar	Nasik	10013	25/02/1986
11	Painganga (Kinwat)	Yavatmal	32463	27/05/1971
12	Tipeshwar	Yavatmal	14863	30/04/1997
13	Yedi-Ramling ghat	Osmanabad	2238	16/05/1997
14	Nawegaon National Park	Bhandara	13388	22/12/1975
15	Pench National Park	Nagpur	25726	22/11/1975
16	Tadoba National Park	Chandrapur	11654	31/03/1955

Table 6

Water Availability & Utilization in Godavari

Water available	
Andhra Pradesh state quota according to Godavari tribunal	1480.00 TMC
According to 'Wapcos' study - 75% dependable yield in Godavari	1472.70 TMC
Available water in Godavari upto Maneru confluence	423.61 TMC
Water to Godavari from Pranahitha + Indravathi	618.91 TMC
Water to Godavari from Sabari	206.50 TMC
Water available in Godavari below Maneru confluence	206.54 TMC
Water utilization	
Above Maneru confluence - major projects are Singuru, Manjira water supply scheme, Nizamsagar project, Sriramsagar (I phase), KademBelow Indravathi confluence - major projects are Kinnerasani, Machkhand, Balimela, Upper Sileru, Lower Sileru, Dhowlaiswaram barrage, Chagalnadu	514.00 TMC
Contemplated major projects - Sriramsagar (II phase), flood canal, Gutpa, Alisagar, Lendi, Devadula	118.65 TMC
Proposed major projects - Lower Penganga, Pranahitha, Yellampalli, Ichampalli, Singareddipally, Dummugudem, Polavaram	513.79 TMC
Total water utilization for Major projects (approx.)	1147.00 TMC
Medium + Minor irrigation projects	312.00 TMC
Total water utilization for Major + Medium + Minor projects	1459.00 TMC
Balance available yield (1480.00 - 1459.00)	21.00 TMC
Proposed yield to be diverted to Krishna basin from Dummugudem	190.00 TMC
Yield available at Dummugudem	5.26 TMC

R. Vidyasagara Rao, Andhra Jyothi 25th January 2003

Table 7

Existing, Ongoing and Proposed Major and Medium Projects on the Godavari in A.P.

Sl.No.	*Name of the Project, District*	*Utilisation of Water*		*Ayacut*		*Power*
		TMC	*MCUM*	*Lakh Acres*	*Hectares*	*(MW)*
A - Existing MAJOR Irrigation Projects						
1.	Singur Project	11.00	311.44	—	—	Nil
2.	Manjeera Water Supply Scheme	2.97	84.09	—	—	Nil
3.	Nizam Sagar Project	58.00	1642.13	2.39	96761.13	Nil
4.	Siramasagar Project Stage-1 from Km.0/0 to Km.234/0	102.83	2911.38	6.82	276113.36	Nil
5.	Kadam Project	13.42	379.95	0.68	27530.36	Nil
6.	Kinnerasani Project	8.14	230.46	0.10	4048.58	Nil
7.	Machkund H.E. Scheme	2.80	79.28	—	—	180
8.	Balimela H.E. Scheme	4.20	118.91	—	—	60
9.	Upper Sileru H.E. Scheme	0.50	14.16	—	—	240
10.	Lower Sileru H.E. Scheme	1.17	33.13	—	—	460
11.	Godavari Delta Scheme	263.60	7463.19	10.10	408906.88	Nil
	Total	**468.63**	**13268.12**	**20.09**	**813360.32**	**940**
B - Ongoing MAJOR Irrigation projects						
1.	Sriramsagar Project Stage-I from Km. 234 to Km. 284	42.52	1203.85	2.86	115789.47	Nil
2.	Sriramsagar project stage-II	26.25	743.20	4.40	178137.65	Nil
3.	Flood Flow Canal	20.00	566.25	2.20	89068.83	Nil

Sl.No.	*Name of the Project, District*	*Utilisation of Water*		*Ayacut*		*Power*
		TMC	*MCUM*	*Lakh Acres*	*Hectares*	*(MW)*
4.	Chagalnadu L.I.Scheme	2.85	80.55	0.35	14170.04	Nil
	Total	**91.62**	**2593.86**	**9.81**	**397165.99**	**Nil**
C - Contemplated MAJOR Irrigation Projects						
1.	Nizamsagar L.I.Scheme	5.990	169.59	0.9200	37246.96	Nil
2.	Lendi	2.380	67.38	0.2200	8906.88	Nil
3.	Lower Penganga project	5.120	144.96	0.4000	16194.33	Nil
4.	Pranahita L.I.Scheme	5.720	161.95	0.5000	20242.91	Nil
5.	Yellampally barrage	63.000	1783.69	3.6600	148178.14	Nil
6.	Ichampally project FRL + 95.00	85.000	2406.57	1.5700	63562.75	350
7.	Godavari L.I.Scheme (Devadula)	50.000	1415.63	5.0000	202429.15	Nil
8.	Singareddypaly H.E.Project	20.000	566.25	2.0000	80971.66	200
9.a.	Dummugudem H.E.Project					350
9.b.	Dummugudem L.I.Scheme	5.260	148.92	0.9100	36842.11	Nil
10.	Polavaram project	325.000	9201.59	7.1900	291093.12	720
11.	Polavaram L.I.Scheme	4.690	132.79	0.3900	15789.49	Nil
	Total	**572.160**	**16199.32**	**22.7600**	**921457.49**	**1620**
D - Existing MEDIUM Irrigation Projects						
1.	Nalla vagu, Medak District	1.30	36.81	0.0447	1809.31	Nil

Sl.No.	***Name of the Project, District***	***Utilisation of Water***		***Ayacut***		***Power***
		TMC	***MCUM***	***Lakh Acres***	***Hectares***	***(MW)***
2.	Ghanpur Anicut, Medak district	4.06	114.95	0.3001	12151.01	Nil
3.	Pocharam, Nizamabad district	3.90	110.42	0.1055	4271.26	Nil
4.	Koulasnala project, Nizamabad district	1.68	47.57	0.0900	3643.72	Nil
5.	Ramadugu, Nizamabad district	1.17	33.13	0.0660	2672.06	Nil
6.	Swarna Project, Adilabad district	1.83	51.81	0.0890	3603.24	Nil
7.	Khanapur channel (Sadarmat), Adilabad district	4.13	116.93	0.0690	2793.52	Nil
8.	Satnala, Adilabad district	2.05	58.04	0.2400	9716.60	Nil
9.	Chelimela vaagu project (NTR Sagar), Adilabad dt.	0.58	16.42	0.0600	2429.15	Nil
10.	Vattivagu, Stage-I, Adilabad district	1.00	28.31	0.0970	3927.13	Nil
11.	Upper Manair project, Karimnagar District	4.44	125.71	0.1310	5303.64	Nil
12.	Shanigaram, Karimnagar district	1.09	30.86	0.0757	3064.78	Nil
13.	Boggulavaagu, Karimnagar district	0.60	16.99	0.0515	2085.02	Nil
14.	Shali vagu, Warangal district	0.65	18.40	0.0306	1238.87	Nil
15.	Lakhana varam lake, Warangal dt.	2.61	73.90	0.0870	3522.27	Nil
16.	Malluru vagu, Warangal district	0.64	18.12	0.0750	3036.44	Nil
17.	Ramappa lake, Warangal district	1.46	41.34	0.0490	1983.81	Nil

Sl.No.	*Name of the Project, District*	*Utilisation of Water*		*Ayacut*		*Power*
		TMC	*MCUM*	*Lakh Acres*	*Hectares*	*(MW)*
18.	Mukka mamidi, Khammam district	0.36	10.19	0.0330	1336.03	Nil
19.	Pedda vagu at Gummadipally, Khammam district	1.46	41.34	0.1600	6477.73	Nil
20	Taliperu, Khammam district	4.27	120.89	0.2470	10000.00	Nil
21.	Vatti vagu Stage-II, Adilabad district	1.97	55.78	0.1480	5991.90	Nil
22.	Thorrigedda pumping scheme, E.G. District	2.41	68.23	0.1380	5587.04	Nil
	Total	**43.66**	**1236.13**	**2.3871**	**96644.53**	
E – Ongoing MEDIUM Irrigation projects						
1.	Yerra vagu (P.P.Rao project), Adilabad district	1.07	30.29	0.1100	4453.44	Nil
2.	Sudda vagu, Adilabad district	2.23	63.00	0.1400	5668.02	Nil
3.	Gundla vagu project, Khammam district	0.26	7.36	0.0258	1044.53	Nil
4.	Kovvada kalva, West Godavari Dt.	0.92	25.91	0.1030	4170.04	Nil
5.	Surampalem (K.V.K. Reservoir), East Godavari Dt.	0.73	20.78	0.1548	6268.02	Nil
6.	Bhupathipalem reservoir, E.G.Dt.	1.68	47.59	0.1210	4898.79	Nil
	Total	**6.89**	**194.93**	**0.6546**	**26502.83**	
F – Contemplated MEDIUM Irrigation Projects						
1.	Pedda vagu at ADA (Komaram Bheem project), Adilabad district	6.130	173.56	0.2450	9919.03	Nil
2.	Golla vaagu, Adilabad dt.	0.990	28.03	0.0950	3846.15	Nil
3.	Rali vagu, Adilabad district	0.620	17.55	0.0600	2429.15	Nil
4.	Pedda vagu (Nilwari Project), Adilabad district	1.180	33.41	0.1300	5263.16	Nil
5.	Pedda vagu, Barkagudem,					

Appendix 1

A.P. WATER VISION - STRATEGIC FRAMEWORK FOR ACTION

Implementing the water vision is the challenge that Andhra Pradesh confronts today. The sustainable development of water resources in the State will depend on four key activities.

— Securing drinking water demands in terms of quantity and quality

— Development of water planning, river basin management and prioritization for sustainable water extraction

— The development of an efficient and well-managed water sector.

This approach to sustainable development requires a significant change in governance, involving policy development, organizational reform, the use of economic measures, strengthening of legal frameworks and development of monitoring and regulation procedures. This approach needs to be supplemented with research and development, and capacity building (Government and community) through education and training.

These four activities and the approach to sustainable development are discussed further in volume 1 of the Water Vision document. The following discussion presents a Strategic Framework for Action, detailing the initiatives required and a time frame for action.

IWRM – Integrated Water Resources Management – is the preferred approach to water management. However, to make IWRM a ground reality requires a range of inputs:

— State-level policy decisions

— Initiatives at the district level

— Legal and institutional frameworks

— Capacity building, research and development

— Engaging wider society

Appendix 2

DEVELOPMENT OF TRIBALS IN COAL BELT OF ANDHRA PRADESH

Singareni is one of the 18 identified Coal and Lignite fields in the country. In Andhra Pradesh it runs along the River Godavari and it is located between 790 20' West longitude and 810 30' East longitude and 160 45' South latitude to 190 30' North Latitude. This belt covers parts of scheduled areas, sub-plan areas and other areas. It is spread over north-eastern portions of Adilabad, northern areas of Karimnagar, Warangal and Khammam districts.

Hundred years have passed since coal mining operations started near Yellandu village (presently in Khammam District). The changes which have come about in the meanwhile are of phenominal dimensions, with far-reaching consequences. In the beginning the problem for the predecessor organisation of SCCL was to find manpower to operate the mines and for the then Government also it was a problem of populating the region. Government policy was directed specifically towards encouraging inmigration to these sparsely populated areas by assignment of land for cultivation liberally. Today the scene has changed radically. The significance of the economic nexus between this mighty organisation and the local area as it has emerged, was perhaps not even remotely visualised then. As it has happened in the case of other industrial and mining areas in the country / there is considerably large immigration and consequent disruption in the local agro-economic situation here also. The activities of SCCL itself were very limited till planned development: and compulsions of economic growth made it necessary for it to take giant steps towards expansion. Even as late as 1950 the annual coal production was recorded at 11.62 lakhs tonnes and the number of employees were about 18,000 but now (1988-89) production was estimated to be 185.00 lakhs tonnes with almost 1.00 lakh employee.?. According to the projected growth, by the turn of the century / the SCCL will attain almost double its present size. The implications of this are far too important to be ignored. While this is the trend on SCCL side / the tribals in the proximal hinterland (PHL) on the other hand, whose habitat has been partly or wholly affected / have yet to show signs of effective participation in this tremendous activity. The migrant population and even those who are far away from this centre of activity have demonstrated the required will and capacity to derive utmost advantage of direct and indirect employment. The problem of associating and preparing the tribal, therefore is still current and there is very little indicating that eflux of time has settled it.

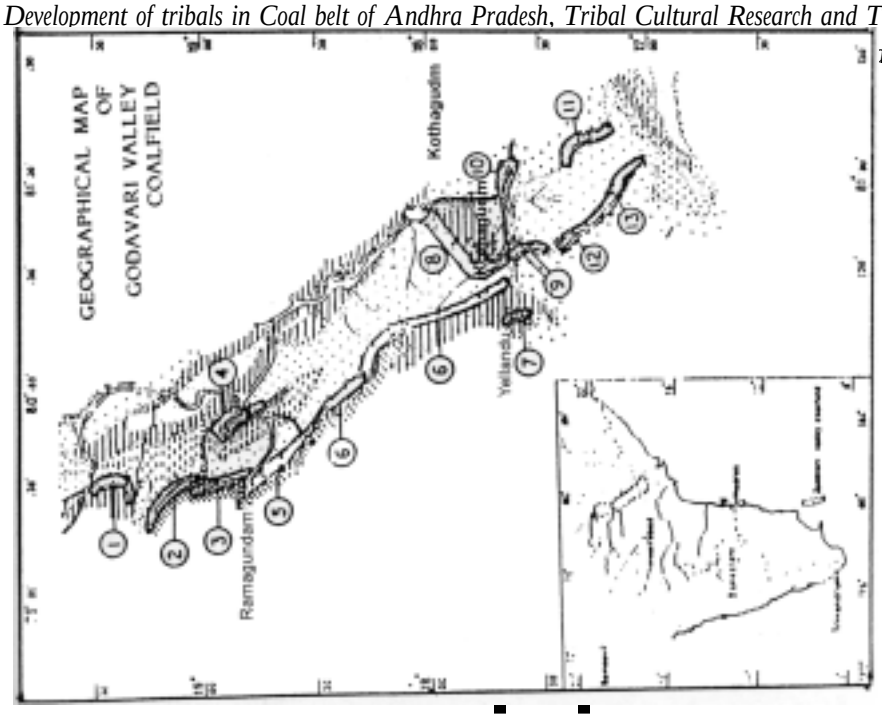
Unless a correct approach is adopted to enable the tribal to participate effectively in the process of economic development, the growing hiatus between the non-tribals and tribals will adversely effect the tribals who have been gradually losing control over their economic resources like forest, agricultural land and minerals. The tribal's loss is partly contributing to economic well-being of the country; hence there is a debt which the State owes to tribals. The policy and programme must necessarily be incisive and spell out in detail how the new symboitic relationship between the tribal and the SCCL will be built-up.

In the tribal areas the industries do not establish even normal linkages with their immediate hinterland. The new opportunities which arise in the form of demand for services and agricultural commodities / animal products, etc. / do not benefit the hinterland. The services sector is dominated by those who come to these areas in the secondary migration waves. In the absence of any conscious effort to plan diversification of agricultural activity in the hinterland / the core sector depends for some time on distant production centres even items like vegetablels, poultry products etc. It is migrant group which gradually establishes small dairy and poultry units in the / neighborhood. It may also take to vegetable cultivation etc.

The skill differential between the high industrial activity and the primitive hinterland economy gets filled by the migrant groups who further displace the tribal. Thus, in the absence of a conscious effort to diversify the hinterland economy / the opportunity is lost and the tribal is bypassed, even in the secondary and tertiary sectors. The new migration and the second generation of the first migrants are able to meet the growing manpower demands of the now opportunities which are created as a result of the multiplier effect of the Central Industrial Activity.

The tribal in our country has proved beyond doubt that he is second to none in the matter of acquiring skills and is as keen as others in facing competition with others in acquiring material wealth. What is required is that "the skill differential" has to be bridged and opportunity afforded to demonstrate it. For instance at one point of time grave doubts were expressed whether tribals would prove good as motor vehicle drivers, but those who had faith in the tribal, persevered and launched the scheme for training them with special care. Today there is a long list of tribals who are engaged in driving of light vehicles and Heavy Vehicles.

- *Development of tribals in Coal belt of Andhra Pradesh, Tribal Cultural Research and Training Institute, Tribal* *ı Pradesh, April, 1989.*



Appendix 2
(1997) 8 Supreme Court cases 191

Samata Vs. ... Appellant
State of A.P.and others ... Respondent
Hyderabad Abrasives & Minerals (P)[#] Vs. ... Appellant
State of A.P.and Others ... Respondent

112. …"when the State leases out the lands in the Scheduled Areas to the non-tribals for exploitation of mineral resources, it transmits the correlative above constitutional duties and obligation to those who undertake to exploit the natural resources should also improve social, economic and educational empowerment of the tribals. As a part of the administration of the project, the licensee or lessee should incur the expenditure for:

(a) reforestation and maintenance of ecology in the Scheduled Areas;

(b) maintenance of roads and communication facilities in the scheduled Areas where operation of the industry has the impact;

(c) supply of potable water to the tribals;

(d) establishment of schools for imparting free education at primary and secondary level and providing vocational training to the tribals to enable them to be qualified, competent and confident in pursuit of employment;

(e) providing employment to the tribals according to their qualifications in their establishment/ factory;

(f) establishment of hospitals and camps for providing free medical aid and treatment to the tribals in the Scheduled Areas;

(g) maintenance of sanitation;

(h) construction of houses for tribals in the Scheduled Areas as enclosures.

The expenditure for the above projects should be part of his/ its Annual Budget of the industry establishment or business avocation/ venture.

[#] Hyderabad Abrasives & Minerals private limited, the petitioner in Supreme Court is respondent to SAKTI, the successful petitioner piloting in Andhra Pradesh High Court. The petition of SAKTI challenging the amendment to MMDR Act enabling an undertaking owned or controlled by the State or Central government is pending before the High Court. (W.P. No. 1571/ 2006).

113. In this behalf, at least 20 percent of the net profits should be set apart as a permanent fund as a part of industrial/ business activity for establishment and maintenance of water resources, schools, hospitals, sanitation and transport facilities by laying roads etc. This 20% allocation would not include the expenditure for reforestation and maintenance of ecology. It is needless to mention that necessary sanction for exemption of the said amount from income tax liability, may be obtained; and the Centre should ensure grant of such exemption and see that these activities are undertaken, carried on and maintained systematically and continuously. The above obligations and duties, should be undertaken and discharged by each and every person/ industry/ licensee/ lessee concerned so that the constitutional objectives of social, economic and human resource empowerment of the tribals could be achieved and peace and good government is achieved in Scheduled Areas."

Unfortunately the directions of Supreme Court were not incorporated in the National Plan for Rehabilitation and Resettlement policy 2003.

******

Prayer of W.P. No. 11970 of 2004 Dt. July 08th 2004 agianst Singareni Coll

"Hon'ble court may be pleased to issue any appropriate Writ, order or Direction more particularly one in the nature of a Writ of Mandamus directing the respondents to prepare a Resettlement and Rehabilitation Package for the Project Affected Families of Khairguda Open Cast Project of Bellampalli region of Adilabad District of the 7th respondent in the light of the National Policy of Resettlement and Rehabilitation for project Affected Families 2003 and the decision of the Hon'ble Supreme Court reported in AIR 1997 SC 3297 and implement the same within a time frame and pass such other orders as this Hon'ble court deem fit and proper in the circumstances of the case."

Appendix 3

Sea change
Dam construction facilitates devastating sea intrusion

T V JAYAN

LARGE-SCALE construction of dams is preventing sedimentation in delta regions, in turn making it easier for the sea to advance and encroach on pristine ecosystems. This is what researchers at the Andhra University, Visakhapatanam, have found. The most devastating outcomes of this phenomenon are displacement of coastal communities and destruction of precious mangrove forests.

Working in the delta region of the river Godavari - a pristine coastal ecosystem, called the rice bowl of Andhra Pradesh - researchers gathered clinching evidence of how damming the river in the last few decades has led to very low levels of sedimentation, which underpins land formation in the coastal areas.

B Hema Malini and Kakani Nageswara Rao studied the sediment flow of the river over three decades (since 1971) with satellite images and data. They found the flow has drastically fallen: from an annual average of nearly 145 million tonnes in 1971-79 to about 57 million tonnes during 1990-98. "Most of the harm happened in the late 1990s," says Rao.

What hinders sedimentation

There are two types of sediment a river carries. The first are suspended sediments, nothing more than soil particles distributed uniformly throughout the flowing water; the second are the bed loads (heavier and coarser grains), deposition of which on land leads to the much-desired sedimentation.

Once a river is dammed, the bed loads get deposited in the reservoirs, and only suspended sediments reach the delta region. Also, waves, tides and currents of the sea constantly chip away at sediments already deposited along the shoreline of the delta regions. The effect is a negative net land balance.

The researchers found that the Bay of Bengal has taken away 48.03 square kilometres (sq km) of the land in the Godavari delta region during a 25-year period (1976 to 2001); the area gained through sedimentation was a mere 29.67 sq km, leading to a net loss of 18.36 sq km. In the 160-km-long coast of the region, erosion was dominant in 102 km of the shoreline.

Godavari falls into the Bay of Bengal through four distributaries: Gautami, Nilarevu, Vasishta and Vainateyam. The researchers compared satellite maps of the mouths of these distributaries, taken 1992 to 2001, with a 1976 topographic map of the region. They found that the shoreline changes and consequent destruction were conspicuous, particularly for the first three distributaries. For instance, mangrove vegetation near the mouth of the Nilarevu, shielded from waves by a sand ridge acting as a wall till 1976, is now being devastated by undesired levels of seawater. The mangrove forest in and around Kakinada (an area not far from the mouth of the Gautami) covered an area of 200 sq km two decades ago; now it occupies only 140 sq km.

Humans too get displaced. In 1992, all of Biyyaputippa village had to be evacuated; the shoreline near the mouth of the Vasishta had receded by almost two kilometres in less than two decades. Recently, another village - Chinamailavanilankha - succumbed to the seawater.

Indeed, sea intrusion here has taken on colossal proportions. Union ministry of water resources data show that the storage capacity of dams and barrages along the Godavari has increased by 12 times since independence. The capacity has increased from 1.6 cubic kilometres (cu km) during the pre-independence era to 19.5 cu km by the turn of the 20th century.

The situation is bound to aggravate, with more dams being constructed. "While dams are unarguably necessary for irrigation and electricity generation, there should be adequate provisions to allow the water to pass through the reservoirs along with the bed loads at least during the peak flow season," aver the scientists. Such changes in dam designs will have one more benefit: maintaining the reservoir capacity, which is otherwise reduced due to siltation.

Down To Earth o December 15, 2004,pp.22.

mangroves get degraded

With sea intruding on land

Appendix 4

THE HONOURABLE SRI JUSTICE
B. SUDERSHAN REDDY
WRIT PETITION No. 8476 of 2001

Order: **2nd April, 2004.**

This Court vide its order dated 12-2-2002 directed the respondents herein to execute the Rehabilitation plan for dispossessed, displaced families in Surampalem Reservoir Project under the direct supervision of ITDA and the progress of rehabilitation of dispossessed and displaced families should be monitored by the ITDA.

That pursuant; to the directions of this Court, the respondents have identified 166 + 57 families as displaced under the submersion of the Reservoir from Kothada and Donelapalli villages respectively for which two Rehabilitation Colonies have been constructed at Chinagarlapadu and Donelapalli villages tinder the personal participation of the displaced. That each house was constructed at the cost of Rs.47,000/- while the actual Housing Scheme sponsored by the Government was for only Rs.22,000/ the remaining funds were provided as stated in the affidavit.

That apart from the amounts already released for construction of houses, further amounts are released to the displaced for fixing doors, windows to their houses on 27-1-2004. The said amount was given from ITDA Funds on request made by the displaced for arranging the fixtures to each of the houses and the said work is required to be attended by the concerned displaced beneficiary only in accordance with I AY scheme.

Thus the respondents have complied with the directions issued by this Court. The whole of the project undertaken by them itself has come to an end. The requisite amounts have already been released for the purpose of fixing the doors and windows etc in favour of the displaced persons.

In such view of the matter, no further directions are required to be issued. No further monitoring of the case is necessary.

The proceedings are accordingly closed.

Appendix 5

RALLY BY TRIBALS FOR NON-TRIBAL'S CAUSE?

By our Staff Reporter

BHADRACHALAM, March 2: The 'Atavi prantha girijana sangham' organized a big tribal rally here on Monday evening with a slogan that had little to do with the tribes.

Streams of people who came from the remote areas, waving red flags and banners, took part in the rally that was spearheaded by the CPI(M) leadership. As the usual practice required, the main demand in a tribal rally organized in association with the Marxists should be protection to the tribes becoming victims of the flawed implementation of the scheduled area regulation 1/70.

But the focus of the rally was otherwise. It was more a demonstration of support for the small non-tribal farmers tilling lands which are not legally theirs in the scheduled area villages. The ralllyists wanted exemption for the non-tribal farmers with five (wet) to ten (dry) acres of land from the scheduled area norms.

The demand was indicative of the CPI(M)'s change in the stand and its effort to woo non-tribes. It was keen on dispelling the fears harboured by the non-tribal farmers about the party stand on the regulation 1/70. The CPI(M) is the only party which opposed the demand for amending the regulation which has put a blanket ban on the enjoyment of the tribal land by the non-tribes and paid a price for it.

The CPI(M) national council member and former M.P. Mr. Tammineni Veerabhadram, said that there was a false propaganda about the CPI(M) stand on the regulation. "Certain forces created wrong impression that the party sought to drive the non-tribes away from the scheduled area". But it was not true. The party had been asking the government to spare the small non-tribal farmers in the scheduled areas.

He said that the exemption for small non-tribal farmers was not a new demand. The party had not touched such farmers in the tribal agitation for land. Some people questioned as to why the exemption for the non-tribes with small holdings should not be incorporated in the law? Such an amendment would result in transforming the big holdings of the non-tribal farmers into small holding almost overnight, he said.

The CPI(M) leader reiterated the demand for setting up a tribal council at Bhadrachalam to safeguard the interests of the tribes in the State. He said that the party would organize tribals in all the nine districts covered by the ITDA projects - from Srikakulam to Adilabad - so as to mount pressure on the government for setting up the council. He wanted the collection charges of beedi leaf enhanced at Rs. 1.75 paise per bundle (of 100 leaves).

He said the distribution of land to the tribals of Dammapet needed a further review. Though the government had been claiming at have handed over Rs. 20 crores worth of land to the landless tribes the area, the extent of land really distributed would be around 400 acres. The CPI(M) had made a study of the distribution so as to give a feedback to the administration.

Mr. Kunja Bojjji, Bhadrachalam MLA and State convener of the Atavi prantha gijijana sangham, made a scathing attack on the government agencies involved in marketing minor forest produce. He said the Girijan Cooperatives had become profit oriented and very little of the margins were being passed on to the tribes. He said that the government failed to help the tribes on the land issue.

- The Hindu, `Wednesday, 03rd March 1999

Appendix 6
VISIT TO POLAVARAM DAM SITE THROUGH THE PAPI HILLS

On February 14, 2006 a four member team[1] reached Pochavaram, the last village by road in Khamman district on the east banks of the Godavari. We engaged a mechanical boat of the Kondareddy boys to reach Polavaram. On the way, we stopped at Perantapalli, a hermitage set up by Swami Balananda, who took up tribal welfare activities through his Poverty Relief Services in 1945. He educated tribals, by establishing hostels for them in nearby towns. The late Vani Ramana Rao and Radhabai Ananda Rao, the first MP and MLA respectively of Bhadrachalam constituency, were products of his institutions. The hermitage, in a scenic spot, and once a pilgrim centre, is now a tourist destination, and consequently, is full of garbage, plastic plates and glasses strewn by tourists.

We found every inch of the Godavari bank cultivated with maize by non-tribal farmers. The crop is luxurious. The hills are dotted with podu (shifting) cultivation of tribals here and there. On the way, we came across four cruisers of A.P. Tourism Department, and many mechanized boats with tourists plying our boat (got with assistance from the ITDA), when they would upgrade their boat on par with the cruisers; they said that they had approached the District Collector, Khammam several times, but in vain.

Near the proposed dam site, we across a place with several illuminated tube lights on a sand dune, and a batch of tourists shouting, dancing and merry-making. They were brought by a mechanized boat standing by. Reports that the Papi hills will disappear once Polavaram comes up is prompting revelers to make a trip to these areas; tribal youth of nearby villages are sucked into this tourist revelry.

On the west bank of the Godavari (in West Godavari district), the Tourism Department has developed a resort in Koruturu village. Karukonda Subba Reddy, who was hanged in Polavaram by the East India Company belongs to this village. In his statement in the court, he declared that he was inspired by Tantya Tope to wage war against the British. The Godavari District Gazetteer, 1907, mentions that the gallows where he was hung was washed away in the floods. Rekhapalli is one among the principalities (Korukonda, Palvancha, Kunavaram and others) established by the Kakatiya empire. When this part of Bhadrachalam was transferred to the British, the tribals rebelled and joined the Rampa fituri under the leadership of Kondla Bheem Reddy. One can find traces of history all around here.

The tribals used to be employed in bamboo felling by the mills last their livelihoods as the mills switched over to farm plantations. The Bhadrachalam Paper mills encouraging farm plantations for their consumptions. From Bhadrachalam onwards, we found tobacco fields which are now in the final stages of plucking and chilli fields and carts carrying fuel wood may be for tobacco barns. The tribals are loosing livelihoods for non-tribals in course of time.

– Sivaramakrishna

[1] Shukla, Retd. PCCF, Dr. Vinod Goud of WWF-ICRISAT, Vikram, a student and bird watcher and myself.

Appendix 7

R & R Clearance for the Indira Sagar (Polavaram) multi purpose major irrigation project

Shri Satish Chandra,
Secretary (Irrigation and CAD Department),
Government of Andhra Pradesh,
Social Welfare (LTR) Department,
A.P. Secretariat,
Hyderabad.

From
Secretary,
National Commission of Scheduled Tribes

(Fax: 040-23450666)

Sub: R&R clearance for the Indira Sagar (Polavaram) Multi-purpose Major Irrigation Project, Andhra Pradesh, Chhattisgarh and Orissa.

Sir,

This is in the context of your letter No.42137/Maj.1(2)/06 dated 16th January, 2006, and the discussions held in this Ministry on 21st January, 2006, on the above subject. The following information may kindly be sent to enable us to accord clearance to the R&R Plan:

(1) As stated by you, both in writing and orally, almost the entire area that will be submerged by Indira Sagar Project {274 villages out of 276 covering 23320 Scheduled Tribe families which constitute about 48.6 per cent of the Project Affected Families (PAFs)}, falls in the Scheduled Areas of the States of Andhra Pradesh, Chhattisgarh and Orissa. The criteria for declaring any area a Scheduled Area under the Fifth Schedule include, as you are aware, preponderance of tribal population, compactness and reasonable size of the concerned area. These characteristics will undergo permanent changes due to the displacement of such a large Scheduled Tribe population, and physical obliteration of extensive tracts of land. In case the ST population which is displaced is settled in a non-Scheduled Area, the various protections available to Scheduled Tribes in Scheduled Areas will not be available to them, making their conditions even more vulnerable. Besides, the Provisions of the Panchayats (Extension to Scheduled Areas) Act 1996 (PESA), inter-alia, which provide control and management over natural resources such as minor minerals, water bodies, etc. to the Panchayati institutions and political protection in terms of reservations in elections to Panchayats and other bodies, would also no longer be available to the displaced persons. Such large scale displacement might even have an impact on the necessary to first comprehensively assess the impact that such displacement would have on the population mix of the Scheduled Areas concerned and the protection that the Scheduled Tribe families, both those remaining

within the Scheduled Areas and those who will be settled outside, will get or be deprived of. The resettlement and rehabilitation of the displaced families may have to be considered within the Scheduled Areas itself, to prevent the impacts mentioned.

(2) Land constitutes the most important resource for Scheduled Tribes, providing tenurial security and sustenance. Cash compensation, no matter how generous, cannot provide the same security and can easily and quickly be frittered away. "Land for land" compensation as proposed by the State Government is, therefore, extremely important. The displaced Scheduled Tribe families also need to be made stake holders and beneficiaries of the development that is being undertaken in the Scheduled Areas. The "land for land" compensation should, therefore, be provided within the command area of the project. It is understood that the State Government is considering this. This may please be confirmed and details provided.

(3) Section 4(1) of the PESA provides for consultation with the Gram Sabhas before acquisition of the land for development projects in Scheduled Areas, and before resettlement or rehabilitation of the persons affected by such projects in the Scheduled Areas. A statement showing the dates of consultation with the concerned Gram Sabhas and the decisions taken, may please be sent to us in a tabular form.

(4) The cost of Rs.117.74 crore indicated in the resettlement and rehabilitation plan may need upward revision as the same does include the cost of land for land compensation to the PAFs in lieu of their acquired land.

3. Since the setting up of a major irrigation project within a Scheduled Area resulting in large scale submergence of tribal lands and displacement of a large number of Scheduled Tribe families is a matter of crucial importance to the tribal people living in the State, it would be advisable to put up the matter along with detailed information on the points mentioned above, before the Tribes Advisory Council of the State for its views.

4. Since some of the Scheduled Tribe PAFs will be in Chhattisgarh and Orissa, it may be indicated whether the rehabilitation being provided to them is the same; if not, the kind of rehabilitation being provided to the Scheduled Tribe PAFs in those States may be indicated.

5. The clearance of the Ministry of Tribal Affairs to the R&R Plan will be considered only after receipt of the above details and the views of the Tribes Advisory Council. The clearance will be granted subject to the Government of Andhra Pradesh obtaining the mandatory forest clearance and the clearance under the Wildlife Protection Act from the Ministry of Environment and Forests. Needless to say no displacement of PAFs should take place till the final clearances to the R&R Plan is conveyed and the mandatory clearances from Ministry of Environment and Forests are obtained.

Appendix 8

Environmental clearance for Polavaram project by MoEF

No. J-12011/74/2005-IA.I, **25th October 2005**

Government of India
Ministry of Environment & Forests
Paryavaran Bhawan,
C.G.O. Comple, Lodi Road,
New Delhi-110003

The Secretary (I & CAD)
I&CAD Department,
A.P. Secretariat
Hyderabad.

Subject - Indira Sagar (Polavaram) Multipurpose Project in West Godavari District Andhra Pradesh - Environment Clearance regarding.

Sir,

This has reference to your letter No. CE(Hydrology)/EE-IV/DEE-II/AEE/1866/Vol-III-1, dated 10.10.2005 & subsequent letter dated 20.10.2008 on the subject.

2. The above referred proposal was considered by the Expert Committee for River Valley & Hydroelectric projects at its meeting held on 19.10. 2005. The project is a intended to provide Irrigation facilities to 2.91 lakh hectares in Visakhapatnam, East Godavari under Left Main Canal and West Godavari and Krishna Districts under Right Main Canal. The project is across the river Godavari. This project besides providing Irrigation facilities in the aforesaid manner will also generate hydel power of 960 MW, divert 80 TMC of Godavari water to Krishna River for stabilizing the existing command under Prakasam barrage and provides drinking facilities to 540 enroute villages covering 25 lakhs population together with water supply to Visakhapatnam city and to industries enroute. Total land requirement for the project is 46060 hectare and out of that 3279 ha. is forest land. Forest clearance yet to be obtained. Total 1,93,35 persons are likely to be affected by this project, out of that

3279 ha. is forest land. Forest clearance yet to be obtained. Total 1,93,35 persons are likely to be affected by this project, out of that 1,75,275 persons in Andhra Pradesh and 6,316 persons from Orissa and 11,766 are from Chattisgarh. Public hearing was held on 10.10.2005. The capital cost of the project is Rs. 9072 Crores.

3. The Ministry of Environment and Forests hereby accords environmental clearance as per the provision of Environmental Impact Assessment Notification-1994, subject to the strict compliance of the terms and conditions mentioned below -

Part - A: Specific conditions

i) 34500 ha. degraded area shall be brought under CAT (Biological) . In addition to this, gully plugs, check dam, percolation tanks etc. will also be done under engineering measures. The action plan for Catchment area treatment s proposed in the EMP report is reproduced below:

Recommended treatment	***1st year***	***2nd year***	***3rd year***	***4th year***	***5th year***	***Total.***
Biological treatment (in Ha.)						
a) Afforestation and re vegetation	750	1500	2250	1500	1500	8500
b) Social Forestry	1500	1500	1500	2250	2250	9000
c) Vegetative barriers	3600	3600	3600	3600	3600	18000
Engineering Treatment (in Number)						
a) Gully plugs	700	600	600	600	600	3100
b) Rock fill dam	440	440	440	440	440	5000
c) Percolation tank	20	20	20	20	20	100
d) Check dams	60	60	60	60	60	300
e) Continuous contour trenches	70	70	70	70	70	350

ii) Total 1,93,357 persons are likely to be affected by this project, out of that 1,75,275 persons in Andhra Pradesh and 6,316 persons from Orissa and 11,766 are from Chattisgarh. The project-affected families will be rehabilitated as per Andhra Pradesh Government's R & R policy -2005 and same package also should be provided for the project affected persons from the Orissa and Chattisgarh State.

iii) A monitoring committee should be constituted which must include representatives of project affected persons from SC/ST category and a women beneficiary. The committee would also attend the Grievance Redressal of the affected peoples.

iv) Commitment made during Public hearing by the project authority on different issues should be fulfilled.

v) Forest Clearance should be obtained for acquiring 3279 hectare forest land & submitted.

vi) As proposed a fish ladder would be constructed for migration of fishes.

vii) Occurrence of stagnant pools/slow moving water channels during construction and operation of the project providing breeding source for vector mosquitoes and other parasites. The river should be properly channelised so that no small pools and poodles are allowed to be formed. Even after taking precaution, due to unforeseen situations, breeding of mosquito and resultant malaria or mosquito borne diseases can increase. If such a situation arises, it will be the responsibility of project authorities to take all corrective steps i.e. residual insecticidal spray in all the project impact area and surrounding 3 Km. area, keeping the flight range of mosquitoes in consideration.

viii) Any other clearance from any other organization if required should be obtained.

Part -B. General conditions

i) Provision of supplying kerosene or cooking gas / Pressure Cooker to the labourers should be kept instead of supplying fuel wood.

ii) Fuel depot may be opened at the site to provide the fuel (kerosene/wood /LPG). Medical facilities as well as recreational facilities should also be provided to the labourers.

iii) All the labourers to be engaged for construction works should be thoroughly examined by health personnel and adequately treated before issue the work permits.

iv) Restoration of construction area including dumping site of excavated materials at dam site & power house site should be ensured by leveling, filling up of borrow pits, landscaping etc. The area should be properly afforested with suitable plantation.

v) A multidisciplinary committee should be constituted with representative from the disciplines of forestry, ecology, wildlife, soil conservation, NGO etc. to oversee the effective implementation of the suggested safeguard measures.

vi) Financial provision should be made in the total budget of the project for implementation of the above suggested safeguard measures.

vii) Six monthly monitoring reports should be submitted to the Ministry and its Regional Office, Bangalore for review.

4. Officials from Regional Office MOEF, Bangalore would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents / data by the project proponents during their inspection.

5. The responsibility of implementation of environmental safeguards rests fully with the Irrigation Department and Government of Andhra Pradesh.

6. In case of change in the scope of the project, project would require a fresh appraisal.

7. The Ministry reserves the right to add additional safeguard measures subsequently if found, necessary and to take action including revoking of the clearance under the provisions of the environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time- bound and satisfactory manner.

8. This clearance letter is valid for a period of five years from the date of issue of this letter for commencement of construction work.

9. A copy of the clearance letter will be marked to concerned Panchayat, if any, from whom any suggestion/representation has been received while processing the proposal.

10. State Pollution Control Board / Committee should display a copy of the clearance letter at the regional office, district industries centre and collector's office / tehsildar's office for 30 days.

11. The project proponent should advertise within seven days from the date of issue of the clearance latter, at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at http:// www.envfor.nic.in/.

(Dr. S. Bhowmik)
Additional Director

Appendix 9

K Sriramakrishnaiah' views on Polavaram project

Polavaram Project - Problems

1. Cannot be of much use without either Ichampalli or Bhoopalapatnam projects on the upstream.
2. R & R problems, Coal belt, etc.
3. Dam line requires changes.
4. Flood management is a problem.
5. The Irrigation is limited to 7.0lakh acres (75% this already under some sort of irrigation) and with only seasonal power.
6. 80 TMC transfer to Krishna delta is at the time not much required.
7. Godavari and Krishna deltas get affected (loss of khariff paddy in 4.0 lakh acres).
8. Yeleru canals need to be remodelled (C.D.Works).
9. Rail and Road bridges are to be remodelled.
10. Drawing about 250 TMC during rainy season from Polavaram to Krishna river disturbs the irrigation systems and agriculture.
11. Kolleru lake level raises.
12. Upputeru capacity becomes inadequate.
13. Budameru becomes a river of sorrow.
14. Vijayawada city gets into danger of flooding.
15. Industrial and other developments between V.T.P.S. and Vijayawada may face serious flood problems.
16. Delinking the Krishna delta from Nagarjunasagar and partly attaching it to polavaram results in diminishing the protective rights of Krishna delta.
17. Problem of heavy silting.

Appendix 10

Ichampally and Bhupalapatnam Dams

The idea for the dams was first mooted in 1978. An agreement was reached among the Andhra Pradesh (AP), Maharashtra and Madhya Pradesh (MP) state governments to take up the multi purpose project as a joint venture. There have been no inter state meetings since then though there has been constant pressure (particularly on the AP government form the rich farmer lobby) to launch the project. That is because a large portion of the benefits from the project especially in the form of irrigational facilities will accrue to AP. Of the three states, Maharashtra will benefit the least but it will have to suffer the most in terms of forest loss and the number of displaced persons. This could be the reason why dissent against the dams has been most strident in Maharashtra.

The Ichampalli hydel and irrigation project envisages the construction of a 2,056 m long and 116.13 m high dam on the Godavari river, 12 km downstream from its confluence with the Indravathi river. The dam will submerge 1,00,858 hectares of land - most of it is prime agricultural land though 18,000 hectares have forest cover. A total of 182 villages will be submerged displacing about 77,092 persons. In Gadchiroli district of Maharashtra the dam will submerge 39,333 hectares of land 19,593 hectares of which is forest land; 78 villages will be submerged and 38,117 persons of whom 5,944 are tribals, will be displaced.

Bhupalapatnam (Indra sagar) is planned as a feeder dam which will supply hydroelectricity. It will cover the districts of Gadchiroli in Maharashtra and Bastar in Madhya Pradesh. The dam, 387.67 m long and 100.69 m high will submerge 71,174 hectares of land (41,683 hectares of this in Maharashtra). Fifty percent of the land is covered by relatively untouched forests. A total of 52 villages (37 in Maharashtra) will be submerged displacing a total of 8,823 people (7,669 in Maharashtra). More than 90 percent of those to be affected by this project are Madia tribals.

In terms of benefits, official figures state that the Ichampalli dam will have an installed hydroelectric capacity of 660 MW and will provide irrigation potential for 1,21,458 hectares of land. The Bhopalapatnam project will have an installed capacity of 1,225 MW of electricity.

Appendix 11

PEOPLE'S MOVEMENTS

Winning their way

The successful movement of dam-oustees and drought affected people in Maharashtra to assert their right to livelihood is a positive sign, writes ***Anant Phadke**.*

THERE is a ray of hope in the overall depressing situation of a lack of resistance to the anti-people, callous policies of successive governments. Over the last decade, the peasants' movement in South Maharashtra has demonstrated how the most unorganised and vulnerable sections of the peasantry can successfully assert their right to livelihood and put forth a new path of development. This movement of dam-oustees and the drought-affected has shown that these rights can be won through defiant and innovative struggles.

Struggling for their rights

"The Maharashtra Rajya Dharangrasta Va Prakalpa Grasta Shetkari Parishad" (Maharashtra State Dam Oustees and Project Affected Farmer's Convention) — under the leadership of stalwarts like the late Com. Datta Deshmukh and Dr. Baba Adhav — has been organising dam oustees in Maharashtra since Independence. In South Maharashtra, the Parishad entered a new phase in the late 1990s when the Maharashtra Government speeded up plans for dam constructions to impound as much water as possible before May 2000 — the deadline set by the Bacchawat interstate water dispute tribunal.

The specially constituted Maharashtra Krishna Valley Development Corporation (MKVDC) began work on a series of dams, without a proper rehabilitation scheme.

The leaders of the Parishad in South Maharashtra, Nagnath Anna Naikawdi, Dr. Bharat Patankar and others decided to launch a determined struggle for the dam oustees' rights.

"Anna" is the legendary leader of the peasantry in South Maharashtra. He was a part of the revolutionary "Prati Sarkar" movement against colonial rule in the early 1940s and is a veteran of many struggles after Independence. Now over 75 years old, Anna is the architect of the Hutatma

* Anant Phadke has been working for the People' Science and Health Movement, mainly in Maharashtra, since 1980.

Kisan Ahiz co-operative sugar factory, a model for a highly efficient, transparent, non-corrupt co-operative enterprise. For years, it has been giving its members the highest price for their cane and the highest bonus to the workers. Patankar, a medical doctor by training, (with his colleagues in the Shramik Mukti Dal) planned the strategy of the movement for equitable water distribution in South Maharashtra. He also led the struggle of the oustees of the famous Koyna dam. This unique struggle won many important demands of the displaced 25 years after the Koyna dam was built.

Rehabilitation first

The most important and innovative demand won by this movement was that each family would receive a monthly irrigation compensation allowance of Rs. 600 till it gets irrigation for the land given to it in the command area.

When the MKVD speeded up at Urmodi to Wang-Marathwadi — the Parishad responded by forcibly stopping construction till its demand for concrete, time-bound rehabilitation plans and their proper implementation was met. The mass mobilisation was widely supported by various sections of the people and duly publicised by the local press. Also, the officials were in a hurry to complete the dam constructions before May 2000. Hence they had no time to wear down the dam oustees, who were in a "do or die" mood.

As a result, dam construction could proceed only in step with rehabilitation. The Maharashtra Rehabilitation of the Project Affected Act, in force from 1986, is one of the more progressive rehabilitation acts, an achievement of the earlier movements in the state. It provides for more land in the command area for marginal and very small farmers. It also provides for 13 civic amenities — from water supply to school to cremation-ground for the resettled villages. Its implementation has been proportional to the strength of the Parishad in the local situation, and hence not adequate in most places, given the apathy of the concerned officials. For the new dams, however, the movement in South Maharashtra forced the officials to give written promises of time-bound plans for rehabilitation including land in the command area. The rehabilitation colonies have pucca houses, roads, schools, water supply and drainage.

Unprecedented gains

The most important and innovative demand won by this movement was that each family would receive a monthly irrigation compensation allowance of Rs. 600 till it got irrigation for the land given to it in the command area. Usually it takes years before the oustees get irrigation for their plot. Now the Government has to pay them for this delay and will therefore be under pressure to complete the irrigation canals and lifts in time. Unlike in the past, the Government cannot afford to step back after completing the dam. Another unprecedented gain has been partial acceptance of the alternative

plan for the Uchangi dam in Kolhapur district, which was prepared by the Shramik Mukti Dal, with the help of experts in the Society for Promotion of Participative Eco-system Management (SOPPECOM) in Pune. To prepare this plan, the people successfully fought for their right to information to get the toposheets of the area that were earlier withheld on the grounds of national interest. Under the guidance of pro-people experts, the movement proposed construction of three tiny dams instead of the Uchangi dam. Together they would impound the targeted 160 mcft water, yet avoid displacement and submergence of good quality land. By applying the principle of equitable water distribution, the irrigated area under the alternative scheme would be twice the area under the official scheme.

A prolonged struggle ensued. Finally the Government agreed to build a small dam at Khetoba village and to reduce the height of the Uchangi dam by two metres so that none of the villages would be submerged. Secondly, the department promised to supply water at its own cost to the affected villages upstream.

But it refused to scrap the Uchangi dam on the grounds that the three-dam scheme was costlier and the cost reduction techniques suggested by K.R. Datey of SOPPECOM were not approved by the irrigation department. This partial success was unprecedented. Nowhere else has a people's movement come up with an alternative plan and successfully forced the Government to agree to change its scheme of dam construction.

Movement of the drought affected

The water already impounded in the dams in Maharashtra is adequate to eradicate drought in most parts of the state if equitably distributed. The drought-affected peasantry in 13 talukas in South Maharashtra have been demanding equitable distribution of water from the dams to every agricultural family including the landless. Bharat Patankar and his colleagues in Shramik Mukti Dal —with the help of pro-people experts like K.R. Datey, Suhas Paranjpe and K.J. Joy —argued that an exogenous supply of around 3,000-4,000 cubic meters of water from a dam is necessary to supplement local watershed development and eradicate drought in these areas. Scientific research and detailed calculations revealed that, in these areas, with an annual rainfall of around 400 to 500 mm of 80 per cent dependability, watershed development alone could not eradicate drought given other factors like land structure, topography and population density. They pointed out that the famous Ralegaon Siddhi experiment led by Anna Hazare would not have been so successful without the exogenous water from the Kukadi canal.

Their water requirement was one-third of that recommended by the earlier generation of experts in Maharashtra like the famous Dandekar-Deuskar-Deshmukh committee. With the more accurate (and reduced) exogenous water requirement, the water already impounded in the dams in

Maharashtra is adequate to eradicate drought in most parts of the state if distributed equitably at the rate of 3,000-4,000 cubic metres per family to supplement local watershed development.

This "equitable water distribution strategy" arose out of the work and struggle of the Pani Panchayat in the 1970s, the Baliraja dam movement in the 1980s and the struggle for restructuring of the Takari lift irrigation scheme in the early 1990s.

The latter two struggles in Khanapur taluka of Sangli district, led by the Mukti Sangharsha Chalwal, laid the foundation of the strategy of struggle in 13 talukas. There have been rallies of thousands of people demanding equitable distribution of water. As a result of a series of struggles, the Maharashtra Government has now included equitable distribution as a policy in its new irrigation schemes.

The movement has been particularly intense in Aatpadi taluka and the irrigation department had to prepare a plan for equitable distribution of water, in accordance with the movement's demand, by restructuring part of the huge Tumbhu lift irrigation scheme. In July 2002, the Chief Minister gave orders for administrative sanction though his orders have yet to be implemented.

These two movements reached a peak when, at the end of October, 1999, about 1,00,000 people held dharnas in support of the demands for proper rehabilitation and equitable distribution of water. In January, thousands of people sat on a three-week dharna demanding implementation of the Government's written promises. As a result, the dam-oustees were given their dues of around Rs.40 crores in February and all their other demands have been conceded.

- The Hindu Survey of the Environment 2003, pp.155-157.

Appendix 12

Extracts from PAPERP plan of Indira Sagar (Polavaram) project prepared by Agricultural Finance Corporation Limited (AFCL), Hyderabad

Demography

2.06 The total population of the Project Affected villages was 2,36,834 according to 2001 census. The number of males was 1,17,321while that of females was 1,19,513 indicating a sex ratio of 1019 females for every 1000 males. Among the affected villages, Chinthuru village of Kunavaram mandal in Khammam district has maximum population of 36,769. Some villages are which having no population i.e. uninhabited villages. The uninhabited villages are Peddapolipaka, Kondaigudem, Chuchirevulagudem and Laxmipuram of Kunavaram mandal of Khammam district and Chintharajupalle and Kotharugommu of V.R.Puram. The SC and ST population constitute 29,796 (12.58%) and 1,25,934 (53.17%) respectively. The overall population of SC and ST coming 65.75% to the total affected population. This indicates the area are predominate of SC and ST population. (p.35)

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Number of males	1,17,321
Number of females	1,19,513
Sex ratio	1019 females for every 1000 males
S.C. population	29,796 (12.58%)
S.T. population	1,25,934 (53.17%)

Project Affected Families (PAFs)

Total PAF households	44,574
ST	21,106 (47.36%)
SC	6875 (15.42%)
BC	7670 (17.21%)
OC	8557 (19.20%)

Appendix 13

Extracts from Report on Resettlement and Rehabilitation of the displaced under Polavaram project prepared by CESS, Hyderbad in 1996

Demographic and Ethnic profile of people facing displacement: The inhabitants of 276 habitations (147 revenue villages and 129 hamlets) spread over 9 mandals in three districts face displacement because of the project. (p. 34)

The brunt of the problem is faced by Khammam district wherein 205 habitations (122 revenue villages and 83 hamlets) spread over seven mandals face displacement. (p. 34)

Among all the 9 mandals, the greatest extent of displacement occurs in Kukkunur and Kunavaram mandals. (p. 34)

The least affected is Boorgampadu mandal. (p. 35)

75.67% of the affected population (8818 out of 11654) in Chintoor Mandal belongs to Scheduled Tribes. (p. 37)

Among the affected population of Polavaram Mandal, 61.11% belongs to Scheduled Tribes. (p. 37)

Name of the Mandal	*% of affected STs*	*% of affected SCs*	*% of affected BCs*	*% of affected Forward castes*
Chinthur	75.67	2.78	12.18	9.38
Polavaram	61.11	10.82	13.62	14.45
Velairpadu	54.13	14.24	17.15	14.48
V.R. Puram	53.23	4.14	37.35	5.28
Devipatnam	51.80	8.30	20.83	18.87
Kunavaram	51.33	13.77	22.00	12.91
Bhadrachalam	28.61	22.92	25.91	22.55
Kukkunur	21.46	29.59	25.00	23.96
Burgampadu	13.08	39.08	29.90	17.94
Total	45.60	16.18	22.66	15.54

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A Note on The Contribution of SAKTI

- SAKTI sees the administration and politics as separate spheres. Of course, the politics decide the direction of the development. In implementing the legislations, politicians should not be allowed to intervene. Officials should not be allowed to exploit the poor taking advantage of their ignorance. SAKTI concentrates in training the poor, particularly the tribals, in using the tools of administration/ governance to check or support the administrative process.

- Resource center on tribal knowledge system of Andhra Pradesh.

- Stopped state supported deforestation in tribal areas of East Godavari district by legal action.

- Forced the government to distribute land records to the tribals right from 1932 and speed up the process of restoration of lands in Khammam and West Godavari districts.

- Facilitating NGO network in Khammam district in the disaster preparedness (Godavari floods) efforts. This network has taken up the cause against Polavaram dam.

- Suing the government to implement the directions of Supreme Court in rehabilitating the displaced tribals.

- P.T.G., Chenchus of Nallamala forests were enrolled as voters in Panchayat Raj Institutions. Their right over water bodies restored.

- Drawing the attention of the society to demand for development in a sustainable way ensuring livelihoods to all sections spread all over the basin.

- Believes that only an informed and determined society can bring an orderly social change.