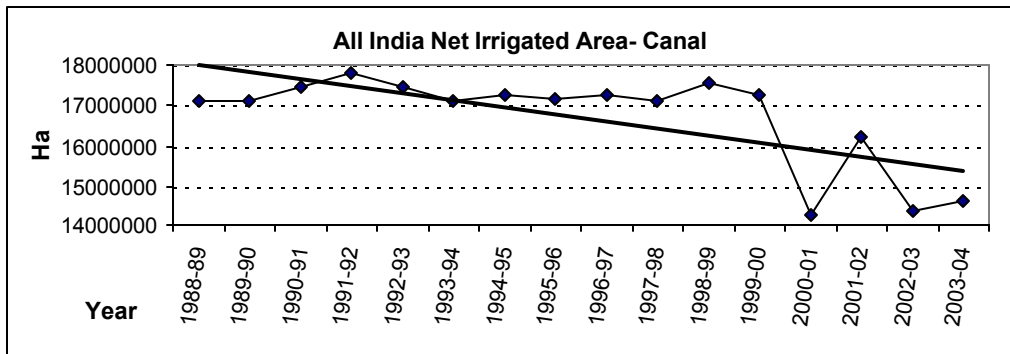


Lead Piece



Rs 100 000 crores spent, but no additional benefits No addition to Canal Irrigated areas for 12 years

In twelve years from 1991-92 to 2003-04 (the latest year for which figures are available), there is been absolutely no addition to net irrigated areas by canals as



reported by Union Ministry of Agriculture, based on actual field data from states. In the period from April 1991 to March 2004, the country has spent Rs 99610 crores on Major and Medium Irrigation Projects with the objective of increasing canal irrigated areas. What the official data shows is that this whole expenditure has not lead to addition of a single ha in the net irrigated area by canals in the country for the whole of this twelve year period. In fact the areas irrigated by canals have reduced by a massive 3.18 m ha during this period. This should be cause of some very serious concerns and the Ministry of Water Resources (MWR), the states and the Planning Commission will have to answer some difficult questions.

The then Prime Minister Rajiv Gandhi speaking on big irrigation projects to State Irrigation Ministers in August 1986 had said, "Perhaps, we can safely say that almost no benefit has come to the people from these projects. For 16 years, we have poured out money. The people have got nothing back, no irrigation, no water, no increase in production, no help in their daily life." Only change that quote would require today is removal of the word *Perhaps*.

In this period, the MWR has been claiming (e.g. in the working group report on water resources for the 11th Plan) that they have created additional irrigation potential of 8.454 million ha and utilisation of irrigation potential of additional 6.297 million ha, but the data from the ground raise questions about these claims. The MWR has been using such claims to push more

allocations for investment in major and medium irrigation projects. The MWR has proposed, for example, that in the 11th plan, an allocation of

Rs 165900 crores should be done for the Major and Medium Irrigation Projects. The available facts show that this will be a total waste of public money.

The net irrigated area by canals all over the country was 17.79 million ha in 1991-92. In all the years thereafter, till 2003-04, the latest year for which the data is available, the net irrigated area by canals has not only been lower than 17.79 m ha, but has been consistently falling, as can be seen from the graph above.

Continued on p 2

INDEX

Rs 100 000 crores spent, but no additional benefits	1
The Tryst with the BIG DAMS	7
Groundwater- India's water lifeline needs urgent attention	15
World Bank wants to support more big hydro in India	16
HC orders stoppage of work on Allain Duhangan HEP	17
Work on Dzongu HPPs stopped, Sikkim CM bows	18
Solar Power edges towards BOOM	19
Maharashtra: Privatisation of irrigation projects opposed	20
Community files police report against Coke factory	21
National Meet on Rainfed Areas demand paradigm shift	22
Pakistan activists challenge the World Bank	23
Publications available with SANDRP	24

Continued from p 1

The detailed figures of net irrigated area by source for the period 1990-91 to 2003-04 is given in the table below.

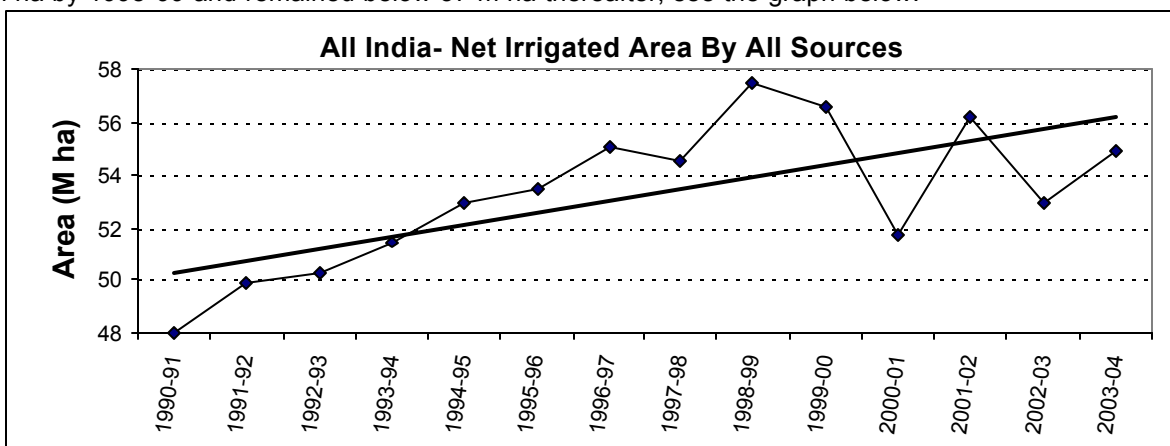
Net Irrigated Area by source, All India, 1990-2004 (Ha)

	Canals	Tube Wells	Other Wells	Total GW	Tanks	Other Sources	Total
1990-91	17453000	14257000	10437000	24694000	2944000	2932000	48023000
1991-92	17791000	15168000	10869000	26037000	2991000	3048000	49867000
1992-93	17457000	15814000	10569000	26380300	2854000	3599000	50293000
1993-94	17111000	16376000	11386000	27762000	3152000	3427000	51452000
1994-95	17280000	17190000	11722000	28912000	3276000	3533000	53001000
1995-96	17142000	17937000	11860000	29797000	3111000	3460000	53510000
1996-97	17262000	18410000	12408000	30818000	3343000	3626000	55049000
1997-98	17092000	18432000	12448000	30880000	3100000	3491000	54563000
1998-99	17554697	20627894	13050073	33677967	2944266	3266846	57443776
1999-00	17278592	20842969	13036710	33879679	2686183	2857897	56564414
2000-01	14229380	21394279	10855953	32250232	2490856	2769566	51740034
2001-02	16240609	25161523	9818183	34979706	2349073	2594310	56163698
2002-03	14347064	18035551	8729653	33765204	2340000*	2532891	52985159
2003-04	14605419	25676525	9513092	35189617	2440000*	2707024	54942060

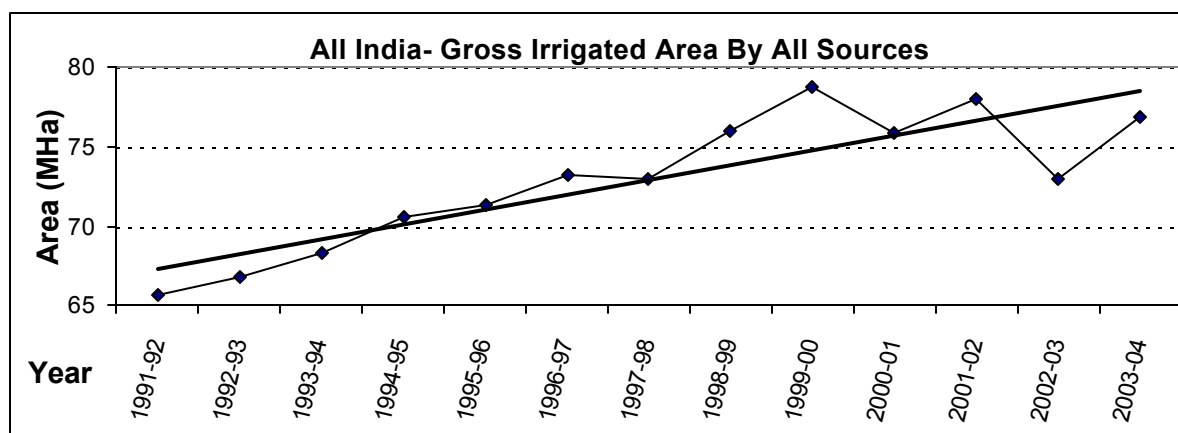
*: Assumptions based on trends.

Source: 1. CWC's "Water and related statistics", various years. 2. Ministry of Agriculture, Agricultural statistics and land use statistics, various years. 3. Website of Ministry of Agriculture, Government of India, <http://agricoop.nic.in/Agristatistics.htm> and http://dacnet.nic.in/lus/dt_lus.aspx

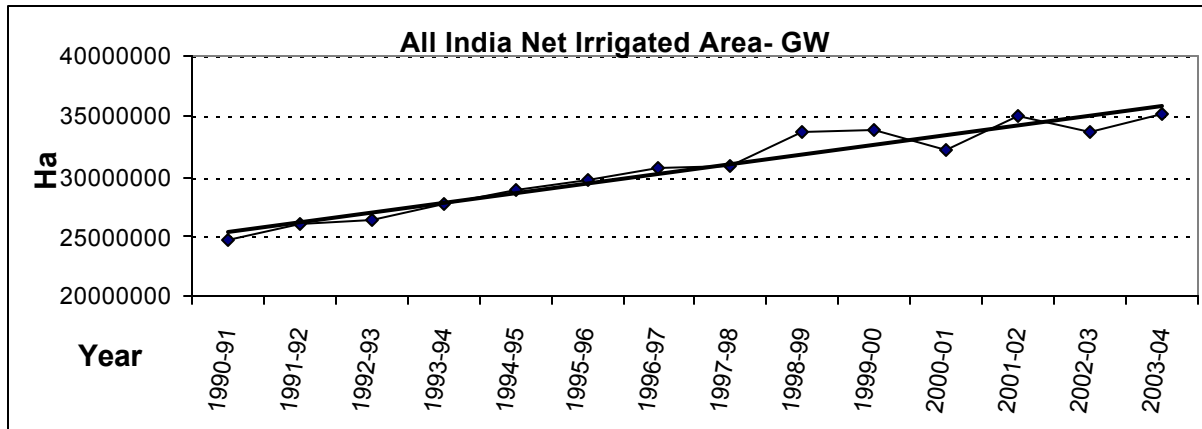
It is clear from the above table that the Net Irrigated Area by all sources increased from 48.02 m ha in 1990-91 to 57.44 m ha by 1998-99 and remained below 57 m ha thereafter, see the graph below.



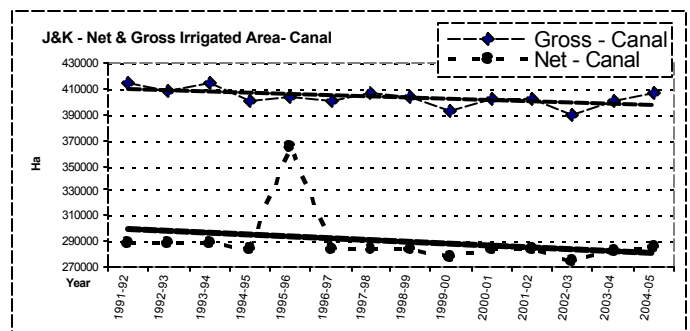
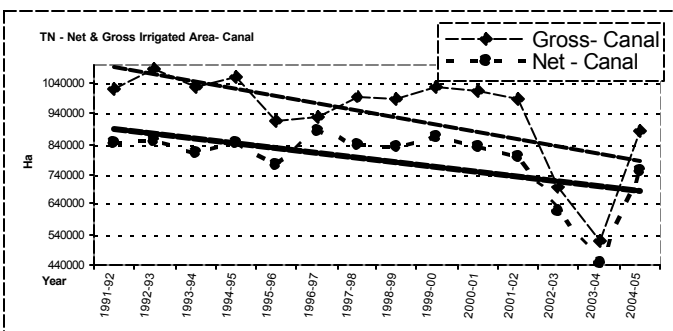
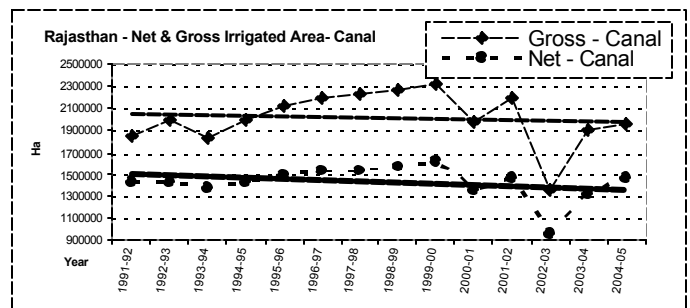
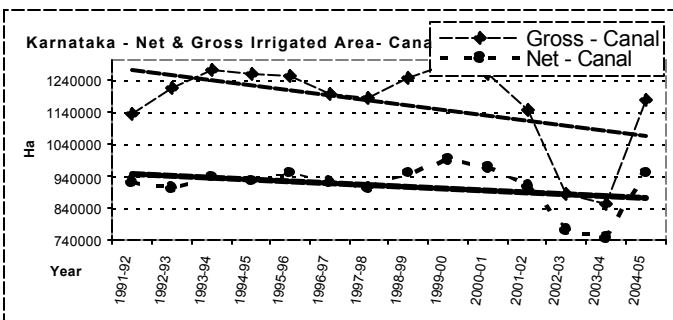
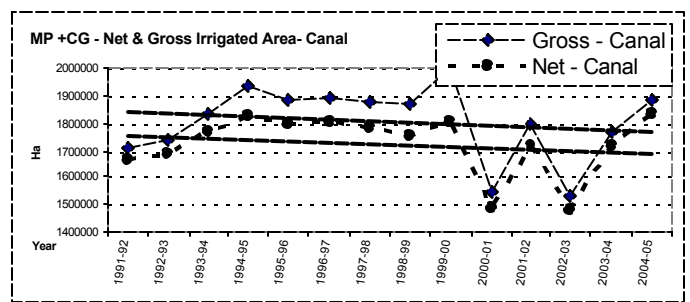
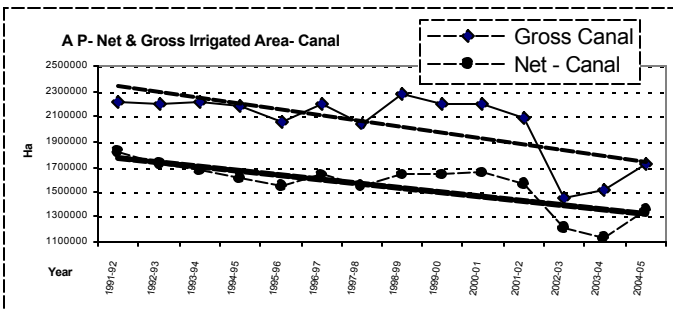
Similarly Gross Irrigated area (if two irrigated crops are taken in year on a give area, that area is counted twice in estimation of gross irrigated area, but once in estimation of net irrigated area) across all sources has been increasing during the period and reaching peak value in 1999-2000 as seen in the graph below.



This increase in all India net and gross irrigated areas have been possible due to the increase in groundwater irrigated area from 24.69 m ha in 1990-91 to 35.19 m ha in 2003-04, see the graph below. In fact the increase in groundwater irrigated area has helped the MWR suppress the reality of non performance of the big dams.



Figures of gross (& net) irrigated areas from canals for some six major states (Andhra Pradesh, Tamil Nadu, Karnataka, Rajasthan, Madhya Pradesh including Chhattisgarh and Jammu & Kashmir) for the period under discussion for which necessary data is available also indicate this trend as can be seen from the graphs below. These graphs show that even gross irrigated area by canals has shown a consistent decreasing trend, even though we do not have nation wide figures for gross irrigated areas by canals for these years.



210 projects completed, no benefit In the period 1991-92 to 2003-04, 210 major and medium irrigation projects have been completed as per the 11th Plan working group report on water resources, as per the break up given below:

**Number of M&M irrigation projects
Completed during 1991-2004**

Years	Irrigation Projects completed		
	Major	Medium	Total
1991-92	3	6	9
1992-97	9	48	57
1997-2002	30	66	96
2002-04	18	30	48
TOTAL	60	150	210

So even though it is claimed that during the period 1991-2004 total of 210 major and medium irrigation projects have been completed, there has been no addition to the net irrigated area. This is another revealing statistic that should worry all concerned. Incidentally, it should be noted that the projects add irrigated areas even in years before they are completed. What this means is that some projects that were completed after March 2004 could also have added irrigated areas in the period we are discussing and some of the projects completed as listed above may have added some of their irrigated areas before the reporting period.

Rs 99610 crores spent, no benefit During the period from April 1991 to March 2004, the government has spent the following amounts on major and medium irrigation projects. This is the total expenditure on these projects including that by the centre and the states.

Expenditure on M&M irrigation projects during 1991-2004
(Rs Crores)

Years	Expenditure on Major & medium Irrigation projects	Expenditure on Command Area Development	Total
1991-92	2729	318	3047
1992-97	21072	2146	23218
1997-02	49289	1519	50808
2002-04	22049	488	22537
TOTAL	95139	4471	99610

The Working Group report for the 11th Plan claims that during the period, total addition to the irrigation potential created and irrigation potential utilisation from major and medium irrigation projects was as given in the table below.

**Achievement of Irrigation Potential creation and utilisation
by M&M projects during 1991-2004**

Years	Potential created	Potential utilisation achieved
1991-92	0.41	0.425
1992-97	2.21	2.13
1997-2002	4.10	2.57
2002-04	1.734	1.172
TOTAL	8.454	6.297

(M Ha)

It is remarkable is that the figures of net irrigation areas were available to the Working group and to the Ministry of Water resources and they knew that the net irrigated areas by canals have been dropping for some years. And yet they took no note of that in the working group report and in fact made claims as stated above to push for the case for additional funding of Rs 165900 crores for major and medium irrigation projects for 11th Plan.

So even though it is claimed that during the period 1991-2004 total of 210 major and medium irrigation projects have been completed, there has been no addition to the net irrigated area. This is another revealing statistic that should worry all concerned.

And yet they took no note of this reduction in canal irrigated areas in the working group report and in fact made claims as stated above to push for the case for additional funding of Rs 165900 crores for major and medium irrigation projects for 11th Plan.

It is true that this analysis would have benefited from similar figures of gross irrigated areas by canals at all India level during the same period. Unfortunately these figures are not available, though we are trying to get them. In the meantime we note that with so much investment, completion of so many projects (which are necessarily in new areas not benefiting from old irrigation projects) and the claims of achievement by the MWR, net irrigated areas by canals should be increasing, not decreasing. What we have achieved, in stead is a reduction in net irrigated area by canals from 17.79 m ha in 1991-92 to 14.61 m ha in 2003-04 (the latest year for which data is available). This is a reduction of massive 3.18 m ha, almost double the planned irrigation from the controversial Sardar Sarovar Project, this is by way of illustration.

In majority of the years during 1991-2004, the rainfall has been normal or above normal as can be seen from the figures in the table below. So it cannot be claimed that this trend is due to low rainfall.

Rainfall during 1991-2004

Sr No	Year	Country wide SW monsoon (June-Sept) rainfall as % of normal rainfall
1	1991	91
2	1992	93
3	1993	100
4	1994	110
5	1995	100
6	1996	103
7	1997	102
8	1998	106
9	1999	96
10	2000	92
11	2001	92
12	2002	81
13	2003	102

Source: Agricultural statistics at a glance, Union Ministry of Agriculture, August 2004

Attempt to underestimate Groundwater irrigation figures The working group report for water resources for the 11th Plan have attempted to underestimate the contribution of groundwater irrigation. This can be seen from the following figures for the area added for potential created and utilised from groundwater for the period from 1991-92 to 2003-04 in the report of the working group.

Irrigation Potential created and utilised from groundwater sources during 1991-2004

(M ha)

Years	Potential created	Potential utilisation achieved
1991-92	1.635	1.55
1992-97	1.91	1.45
1997-2002	2.50	0.85
2002-2004	1.124	0.904
TOTAL	7.169	4.754

As against the figures of potential creation of 7.169 m ha and potential utilisation achievement of 4.754 by groundwater during the 1991-2004 period, the actual addition of net irrigated area during the period has been 9.15 m ha. If we estimate addition to the gross irrigated area during the period from groundwater, the figure comes to 12.54 m ha,

Even as the Planning Commission finalises the 11th Five year plan, this is a golden opportunity to make radical changes in our water resources development plans. If we miss this opportunity, the combined impacts of the wrong priorities we have pursued so far and the global warming will result in we having neither the water required for the people or the economy, nor the cash to maintain and sustain the existing benefits, as the 2005 World Bank report also concluded.

This trend indicates that in stead of spending money on new major and medium (M&M) irrigation projects, the country would benefit more (at lesser costs and impacts) if we spend money on proper repair and maintenance of the existing infrastructure, taking measures to reduce siltation of reservoirs and at the same time concentrating on rainfed areas.

almost three times the estimate of potential utilisation by the working group headed by secretary, Union Ministry of Water Resources.

Exaggeration of Canal irrigation figures? The Union Water Resources Ministry also seems to be indulging in exaggeration in potential utilisation of canal irrigated areas. For example, according to the working group report for the 11th Five year plan, Maharashtra had irrigated potential utilised from major and medium projects to the extent of 2.147 m ha in 2001-02 and 2.313 m ha in 2005-06. When we look at the Benchmarking Report for Irrigation Projects, Govt of Maharashtra for 2005-06, we see that according to the state govt, Maharashtra had achieved utilisation of irrigation potential from M&M project to the extent of 1.25 m ha in 2001-02 and 1.617 m ha in 2005-06, both figures are way below the figures claimed by the 11th Plan working group report. The question arises, why should the working group, chaired by Secretary, Union

Ministry of Water Resources, exaggerate the figures of potential utilised by M&M projects?

The Reasons Some of the reasons for this situation include: Siltation of reservoirs and canals, lack of maintenance of the irrigation infrastructure, water intensive crops in the head reaches and non

building of the canals and over development (beyond the carrying capacity) of projects in a basin, water logging & salinisation, diversion of water for non irrigation uses. Some other possible reasons could include: increased rainwater harvesting and groundwater use in the catchments of the major irrigation projects, increased groundwater use in the canal command areas. In some cases, the additional area added by new projects is not reflected in the figures as the area irrigated by older projects (due to above reasons) is reducing. Indeed the World Bank's 2005 report *India's Water Economy:*

Bracing for a Turbulent Future showed that annual financial requirement for maintenance of India's irrigation infrastructure (which is largest in the world) is Rs 17000 crores, but less than 10% of that amount is available and most of it does not result in physical maintenance of the infrastructure. In some over developed basins, the new projects are like zero sum games, since they would be

taking away water for some of the downstream areas. Optimistic hydrological projections, which is almost universal in big irrigation projects, would mean that projects in any case won't provide the projected benefits.

A number of eminent experts in this area whom we consulted to check if this trend is indeed happening, said that yes, this is indeed true. Some such eminent experts include: Planning Commission Member BN Yugandher, well known expert Prof VS Vyas, former Planning Commission member L C Jain, former secretary Union Ministry of Water Resources, Shri Ramaswamy Iyer, well known irrigation expert Dr Tushar Shah, former World Bank consultant Prof RPS Malik, among others.

Some officials of the Ministry of Water Resources justify big irrigation projects, arguing that increase in groundwater irrigation becomes possible because of recharge of groundwater by canal irrigation. This is strange proposition. If groundwater recharge is an objective than canal irrigation is not the best option to achieve that objective.

Secondly, Dr Tushar Shah of International Water Management Institute says that hardly 12% of wells are in canal command areas. In a paper presented at a National Workshop on Interlinking of Rivers in Delhi in Oct 2007, Dr Shah et al say, "a substantial part of the groundwater irrigated area growth in the last decade is in districts outside the command areas and show no significant spatial dependence with surface irrigated area growth." It is clear that big irrigation projects cannot be justified in the name of increasing groundwater recharge by canals.

The Implications These findings have grave implications. Firstly, they very clearly imply that the thousands of crores the country is spending each year on big irrigation projects is not leading to any additional net irrigated area. Secondly, the real increase in irrigated area is all coming from groundwater irrigation and groundwater is the lifeline of irrigated agriculture. Thirdly, in fact these futile investments of Rs 99610 crores not adding any irrigation may be the reason behind the

slackening of the agriculture growth rate India has experienced over the last decade. Fourthly, Rs 14669 crores spent on the Accelerated Irrigation Benefits Programme (AIBP) between April 1996 (when the

Rs 14669 crores spent on the Accelerated Irrigation Benefits Programme (AIBP) between April 1996 (when the programme started) to March 2004 (the period we are discussing) has not helped add any additional irrigation area, the claims of MWR that AIBP has added 2.66 m ha of additional irrigation potential not withstanding. AIBP clearly needs to be scrapped.

programme started) to March 2004 (the period we are discussing) has not helped add any additional irrigation area, the claims of MWR that AIBP has added 2.66 m ha of additional irrigation potential not withstanding. AIBP clearly needs to be scrapped. Lastly, this raises many accountability issues & those responsible in MWR, Planning Commission & states will have to answer for a lot. The Bharat Nirman Yojana, that plans to add 1 crore ha irrigated area during

2005-09 also needs to be urgently reviewed, else, a lot of money and precious other resources will be wasted.

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On groundwater front, we need to make preservation of existing groundwater recharge systems and augmentation of the same our top priority. Weeding out the unviable investments from the ongoing M&M irrigation systems needs to be done so that good money (not yet spent) is not thrown after bad money (spent on unviable projects). In case of some of the ongoing

projects, it may be more profitable to review the projects to reduce further investments and impacts.

Even as the Planning Commission finalises the 11th Five year plan, this is a golden opportunity to make radical changes in our water resources development plans. If we miss this opportunity, the combined impacts of the wrong priorities we have pursued so far and the global warming will result in we having neither the water required for the people or the economy, nor the cash to maintain the and sustain the existing benefits, as the 2005 World Bank report also concluded.

Himanshu Thakkar & Bipin Chandra, SANDRP

The Tryst with the BIG DAMS

Abstract India's water resources development has been dominated by large dams, to the exclusion of social and environmental concerns, to the exclusion of performance of created systems, to the exclusion of better options, to the exclusion of needs of the people of the country, to the exclusion of democracy or even transparency in governance. In recent years the situation has gone worse with accelerated pace for building large dams and dilution of the environmental norms. Available information shows that the dams are performing much below their projected or potential levels. Evidence from some community driven examples show that the water resources development need not be a game of trade off (benefiting the rich at a cost to the poor), but can be a win-win situation if there is informed democratic governance. If the lessons from past experience are not learnt and if there is no dramatic correction soon, the global warming will make the situation worse.

The tryst with the destiny, the famous words of Pandit Jawaharlal Nehru, India's first Prime Minister, on the midnight of Aug 14, 1947 has been unfortunately translated into the Tryst with the Dams as far as water resources development in India is concerned. As India celebrates 60th anniversary of independence this year, it is a good opportunity to take stock of the implications of this big dam centric water resources development that India's first government pushed the country into. Unfortunately, there has been no credible independent attempt to comprehensively assess the performance of large dams in India, though the India Country Study (1999) done for the World Commission on Dams (WCD) did attempt such an assessment. Let us look in some broad strokes where we stand.

The Dam Pace In 1950, India had a total of 346 large dams¹. That number has become 4525 as per the latest edition (dated July 2002, the fact that we do not have latest figures after that over five year old publication speaks about the state of information gathering and dissemination) of the National Register of Large Dams, published by the Govt of India's Central Water Commission. The pace of completion of large dams had peaked in 1970s (1263 completed between 1971 and 1980), and dropped thereafter (1186 in 1980s and 347 in 1990s), but evidently, seems to have gone up in the new

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millennium, considering that the 425 dams that were under construction in 1999, have almost all been completed. Moreover, the CWC list does not include projects that are solely hydropower projects and the population of such projects has been going up in recent years. Large dams have thus dominated India's water resources development, to the exclusion of local water systems or groundwater recharging or repair and maintenance of created infrastructure and as if people and ecosystems do not matter. There is no credible attempt to look at the non dam options when a new dam is proposed. This has been officially accepted², "Secondly at present, detailed documentation regarding examination of alternative options to optimally meet the

overall objectives and aspirations in the light of basin plan is not given in the Feasibility Report/ DPR. A detailed chapter analyzing the available options, even not involving large dams, should preferably be included in the DPR of future project proposals."³

NEW ATTEMPTS TO PUSH MORE LARGE DAMS

Some of the noteworthy recent attempts of the Govt of India to accelerate the pace of dam building in India are described below.

Interlinking of Rivers Through a strange sequence of co-incidents, as soon Dr APJ Abdul Kalam took over as India's President in July 2002, the mega plan to link up India's 37 major rivers through some 30 river links got a big and high profile push, which then involved many arms of Indian state. As one of the sharp observers of India's water resources scene observed, with the introduction of the Interlinking of Rivers (ILR) plan on the

¹ The World Commission on Dams and the International Commission on Large Dams both define large dams as one that is more than 15 m high from the deepest foundation. The National Register of Large Dams also includes dams with height of 10 m to 15 m under large dam if it complies with one of the special conditions, e.g. if the crest is longer than 500 m, storage capacity is over one million cubic meters, etc, (Preface of the CWC publication).

² See the Report from the Ministry of Water Resources for the 11th Five Year Plan that started in April 2007, page 53.

³ DPR stands for Detailed Project Report

national scene, the water resources establishment seems to have got a new life, since the Narmada and other campaigns had put them on the defensive in 1980s and 1990s. With the new govt and the new President at the helm in Delhi after May 2004, the high profile that the ILR plan got earlier has gone away, but the new government continues to remain committed to the ILR plan.

Accelerating Hydropower initiative

In March 2001, Govt of India, in an attempt to formulate road map to accelerate the pace of Hydropower Development, asked the Central Electricity Authority to put together Ranking study of the remaining hydropower projects. That seven volume study was published by Govt of India's Central Electricity Authority in Oct 2001. "The Union Government is giving highest priority to the development of hydropower, keeping in view the need to double our power generation capacity in the next ten years to overcome the shortage of power", said the then Prime Minister Atal Behari Vajpayee while launching his government's 50 000 MW hydropower Initiative⁴. Under the initiative, 162 hydropower projects (identified through the ranking study mentioned earlier) in 16 states were to be completed in the next 15 years. The current government continues to pursue that path, as it evident from the Working Group Report for Power for the 11th Five Year Plan (2007-2012).

Private Hydro Initiative Since 1991, the government has been trying hard to push the private companies to take up large hydropower projects, so that more investment could be attracted into the area. The attempts were not particularly successful until recently, when the Electricity Act of 2003 and incentives offered by states like Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh, a large number of hydropower projects have been and are being handed over to the private companies for development.

The NE initiative India's North East is considered to have huge untapped potential of hydropower development and the government have been trying various measures to push large dams here for hydropower generation ("Large Dams for Hydropower in North East India", SANDRP, June 2005). They have not succeeded in a big way here, but recently many MOUs (Memorandum of Understanding) have been signed for a few big Hydro Electric Projects (HEPs) here. The World

Bank has also been trying to push this through the proposition of a North East Water Resources Authority, on the lines of the Tennessee Valley Authority (TVA) of the US. They too have not succeeded so far, but the attempts are still on. They have of course not bothered to say that the earlier very high profile attempt to replicate TVA model in India, in the form of the Damodar Valley Corporation (DVC), has largely been seen as disaster, even according to its first Chief Executive Officer Sudhir Sen⁵. As the World Bank's 2006 report agrees (p 73), the Damodar Valley Project was "the very first Bank financed project" in India. DVC continues to exist, but its future plans and current installed capacity largely comprises of thermal power projects and its mandate is much diluted from what was envisaged at the outset.

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AIBP, Bharat Nirman India's current Finance Minister, Mr. P Chidambaram, a decade ago in 1996, when also he was a finance minister, launched Accelerated Irrigation Benefits Programme (AIBP), which was essentially a programme to push funding of Large Irrigation Projects. A decade later in 2005, to add to his options of funding more large dams, his government started Bharat Nirman Project, whose irrigation component had the objective of adding 1 crore ha irrigated area in four years, by 2009. This is another way to add to the funding of large irrigation projects.

The Farmers Suicide package One would have thought that at least a package designed to solve the crisis affecting India's millions of farmers and leading them to suicides in thousands would not be used as an opportunity to push more large dams. But one can be so wrong!!! When India's Prime Minister Manmohan Singh⁶, announced the Rs 3750 crore package for Vidarbha region in Maharashtra in June 2006, one was shocked to learn that Rs 2177 crores (over 58%) of that package was for large irrigation projects.

Attempts at nationalization In India's constitution, water being a state subject, the World Bank and the Government of India (GOI) has often found them

⁵ See for example, Sen Sudhir, *A Richer Harvest: New Horizons for Developing Countries*, Tata McGraw Hill Publishing Co, New Delhi, 1974, on page 86, Sen writes, "Thus, at the dawn of her independence India relied wistfully, on her high dam builders... it was a luxury India could least afford".

⁶ See for example: <http://www.thehindubusinessline.com/2006/07/02/stories/2006070202980300.htm>

⁴ see for example:

<http://www.tribuneindia.com/2003/20030525/nation.htm#2>

handicapped by the divergent views of different states on various Water Resources Projects (e.g. ILR). One of the ways to solve this *hindrance* that both the World Bank and GOI have been trying has been to push for Nationalisation of Rivers or alternatively to bring Water Resources into concurrent list from the present state subject in constitution. Various formulations are being tried in this regard, but nothing has fructified so far.

The World Bank's Storage advocacy In June 2005, when the World Bank circulated the draft India Water Country Assistance Strategy, titled *India's Water Economy: Bracing for a Turbulent Future*, (the Report was published in 2006 as listed in the references below) they launched a new way to push big dams, when they said⁷ that India has a very low per Capita storage capacity compared to US, China, Australia, Spain or even Morocco. This is very mischievous. Firstly, per capita storage capacity cannot be a measure of development. Storage capacity is only a means to an end and this advocacy is an attempt to make the means an end in itself. Secondly, it talks only about storage through big dams. But there are many options for storage, including small storages and also the best option of underground storages. Unfortunately, the World Bank's tendentious advocacy, happily adopted by Indian water establishment, does not look at these issues, it is basically driven to promote more big dams.

However, there is no attempt to analyse the performance of created storage capacity. When we analysed the figures for the last 13 years (1993-94 to 2005-06), we found that on an average, each year about 34.41 BCM of storage capacity (equivalent to six times the live storage capacity of the controversial Sardar Sarovar Project) out of only the monitored storage capacity is not filled up. That means that on an average an investment of Rs 34886 crores has remained idle in each of the last 13 years.

This happens when in 9 of the 13 years the rainfall was almost average or above. Should we not be trying to understand why this is happening? How we can make the existing storage capacities play the useful role it is supposed to play, in stead of pushing for more storages? But these questions are neither asked, nor an honest attempt made to find answers thereof.

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Another indicator to assess the performance of the created storage capacity would be to see, to what extent the water stored in reservoirs is used before the next monsoon. The water that remains in the storages when the next monsoon is about to set would generally indicate (except in dams that have carryover capacity in its design, which is the case for very few dams in India) that the water stored in the previous monsoon has not been used up. We saw that on the onset of 2006 and 2007 monsoon, a number of reservoirs had high water stored, some reservoirs having upto 60% water. This clearly indicates that existing storage capacities are not being put to useful purpose that it has been created for. This has another serious implication: this would also mean that the dams will have that much less storage capacity for the following monsoon, many times leading to sudden release of high volume water, leading to floods in the downstream areas. This was indeed the situation in a number of river basins in India in 2006 and 2007, including in Tapi, Mahi, Sabarmati, Krishna and Godavari basins. No questions are even asked as to what is the reason behind this non optimum use of reservoir capacities.

11th Five Year Plan Govt of India's 11th Five year plan is supposed to have started on April 1, 2007, but the plan awaits final approval. The report of the Working Group on Water Resources Development for the 11th Five Year Plan, chaired by Secretary, Union Ministry of Water Resources, recommends that there should be allocation of Rs 153000 crore for large irrigation projects and Rs 13500 crores for smaller projects. This again shows the continued heavy bias for big projects. This fails to recognize that groundwater is India's lifeline and that the only way to sustain this lifeline (in crisis situation today already) is to ensure maximum harvesting of rainwater locally and recharging of groundwater aquifers.

Regulatory issues There are many regulatory issues that are relevant to water sector, including the social and environmental issues, which all are driven towards making it easier for large projects to go through. Another attempt in this direction is to create State level Water Regulatory Authorities (already created in Maharashtra, draft acts formulated in Gujarat, Madhya Pradesh and Arunachal Pradesh).

The 11th Five Year plan Water Resources working group report mentioned above recommends that all states should have a Maharashtra style regulatory authorities

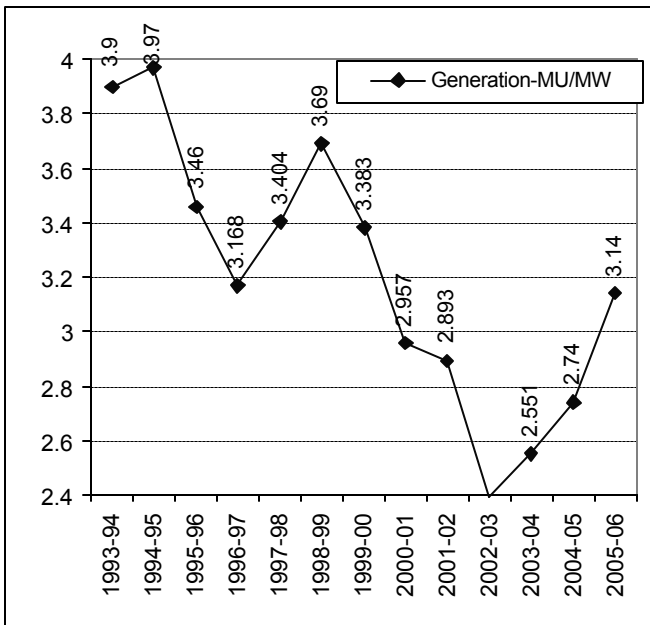
⁷ See page (xv) of the World Bank, 2006

and that there should also be a national water regulatory authority. These institutions would bring sea change in the way water resources development and management happens in India, largely in favour of facilitating more large projects and also facilitating institution of entitlements and trading of entitlements. These institutions are full of bureaucrats with little role for anybody from outside the governments. Maharashtra seems to be the current laboratory of water sector reforms in India and recently that state has proposed first ever privatisation of irrigation project in India.

THE PERFORMANCE One of the stark realities of India's dam building has been that there is absolutely no attempt at credible, independent assessment of performance of the large dams. Let us see the limited evidence that is available about the performance of large dams in India.

- Out of India's net cultivated area of about 142 million hectare (m ha), the net irrigated area is 57 m ha as per working report (agriculture) of 11th Plan and has remained around that figure for more than 7 years now. Out of the net irrigated area, the area irrigated from large dams is about 17 m ha, the rest is either irrigated by groundwater or small systems. What this means is that after spending over Rs 200 000 crores on large dams and allocating 75-80% of available resources for large dams, the projects have benefited just 12% of net cultivated area.

- Here it should be remembered that the productivity



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of area irrigated by large dams is lower than the productivity of area irrigated by groundwater. In addition, the vast 85 m ha area remains rain fed. So what is the contribution of large dams irrigated lands to India's food production, the most celebrated reason for building these projects. Well, our calculation suggest that gross contribution of large dams irrigated lands to foodgrains production is 9.98%⁸, this was also the conclusion of India Country Study done for the WCD, mentioned earlier. Net contribution, considering that these lands would have anyway produced some foodgrains and that in the process of building these projects, we have also lost large area in submergence (as per our recent calculation, a total of 4.42 m ha land has been submerged by India's large dams), canal building and for other related infrastructure, the net contribution would be even less. Remember that some of the lands irrigated by large dams are also water logged and salinised, further

reducing the contribution of large dams.

- On Hydropower front, India now has total hydropower installed capacity of 34476.1 MW as on March 31, 2007⁹ and the projects generated 113359 Million Units electricity in 2006-07 at the rate of 3.29 Million Units per MW installed capacity. What is interesting to note is that this performance of 2006-07 (a good monsoon year) in electricity generation from hydropower projects is lower than the performance of at least 13 of the last 22 years (for which we could get data). In fact if we plot the data, for 1993-94 to 2005-06¹⁰, there is gradual downward trend, see the graph alongside, the drop being a huge 20% between the two years. What this means is that each MW of additional capacity we are adding is generating less power. Member (Hydro) of Central Electricity Authority, government of India accepted at a meeting in Sept 2007 that indeed this decline is happening. There are many reasons for this trend, including silting of reservoirs, aging dams and machines, over development of river

⁸ See page 22-24 of Thakkar (1999) for detailed calculations. The contribution of large dams irrigated lands since then is likely to have gone down as the proportion of lands irrigated by large dams in total irrigated area has gone down and proportion of groundwater irrigation has gone up.

⁹ See the Monthly generation figures from Government of India's Central Electricity Authority for March 2007, www.cea.nic.in

¹⁰ All these figures are from Central Electricity Authority, Government of India.

basins and so on. Here another related issue is that hydropower projects are justified in the name of peaking power, but consumers do not pay extra for the peaking hour power consumption, time of day metering is being thought of only now.

- Coming to the issue of storage capacities, our study¹¹ (based on siltation data obtained from the Central Water Commission, government of India, under the Right to Information Act) shows that over the last ten years, India has added about 3 billion cubic meter of storage capacity through big projects each year and 1.95 BCM of that capacity (i.e. almost two thirds of the new capacity added) is getting silted up and nothing is being done on ground to arrest that destruction.

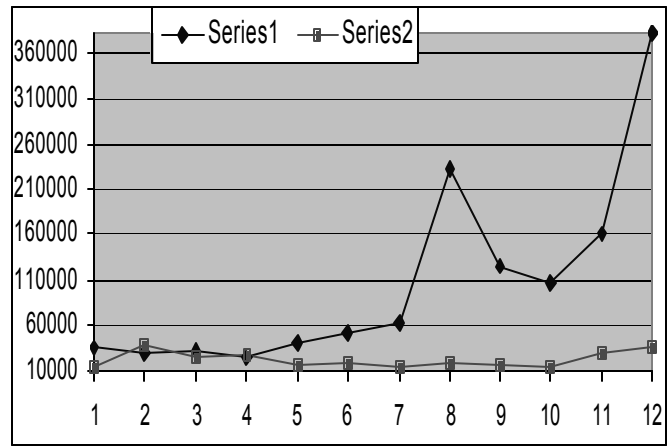
Hydropower is not clean, green, renewable or cheap

The claims that hydropower is cheap, clean, green and renewable are definitely unsupportable. The storages get silted, which means they have finite life, they are not renewable. The projects cause a lot of social and environmental impacts, which shows they are not green. The fact that the project developers do not pay for many of the costs (e.g. huge social and environment losses) involved in building the projects, means that some other people pay for it, which in turn means that they are not cheap as claimed. And research over the last decade has shown that storages in tropical countries can cause large amounts of green house gas emission¹² shows that they are not clean. In fact recent estimates suggest that methane emissions from India's dams may be contributing more to global warming than the dams of any other country and it could be almost a fifth of India's total green house gas emissions.

Cost of Irrigation: Minor irrigation could become major one

In the alongside graph, series 1 is for the figures of per ha cost of irrigation for major and medium irrigation projects and series 2 is for the figures of per ha cost of irrigation through minor irrigation projects, all figures are from Planning Commission (GOI) documents. It is clear that adding a ha of irrigation potential through major project is now costing ten times the cost of adding 1 ha of irrigation through smaller projects.

Per Ha cost of irrigated area over the years



- On the flood control front, very few large dams in India have provision of designed flood cushion storage, but it is claimed that the dams help flood control.

The track record of environmental impact assessment, management of environmental impacts is dismal. As noted by Shekhar Singh et al in their review in 1999, "The findings of this study suggests that, in India, the environmental and Social impacts of large dams were inadequately understood, mostly ignored in financial and economic calculations, and the prevention and mitigation of adverse impacts usually ignored." Since that report was made public, the situation has only gone from bad to worse.

However, there are increasing number of instances that show that the wrong operation of dams are actually creating flood disasters, as it happed in Tapi, Sabarmati, Mahi, Chambal, Krishna and Godavari basins in 2006 and Sabarmati, Mahi, Tapi Godavari and Krishna basins in 2007, as noted earlier.

ENVIRONMENTAL IMPACTS: Does anyone really care?

It is well known that big dams can have significant environmental impacts in the reservoir area, upstream, downstream, command areas and at global level (e.g. emission of global warming gases like methane).

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The trouble begins at the stage of assessment of the impacts. Environmental impact Assessment reports are typically based on incomplete studies, reflect pro big dam bias of the authors, are often based on wrong facts and figures and reach unwarranted conclusions. They almost never include proper downstream studies, basin

¹¹ See cover story in Aug-Sept 2006 issue of "Dams, Rivers & People", available at www.sandrp.in/drpinde

¹² See May-June 2007 issue of "Dams, Rivers & People", page 5.

wide impacts of the project, cumulative impact assessment, options assessment, downstream water releases, muck disposal plan or public disaster management plan. The question of assessment of global warming impact of the projects or how the project will perform in view of the global warming impacts possibly does not even cross the minds of the authors or the project authorities. These systemic appraisal problems are equally applicable to even World Bank funded projects as is clear from the experience of the World Bank funded 1500 MW Nathpa Jhakri Project on Sutlej River in Himachal Pradesh and the IFC (International Financial Corporation – the private sector arm of the World Bank) funded 192 MW Allain Duhangan hydropower project on Beas River in the same state.

The next important issue is that of implementation of the environment management plan as written in the EIA report and as generally required under the conditions of environmental clearance of the project. The official agencies have accepted for example, that the catchment area treatment plan required for ensuring that projects function as planned during the project life span, have not been implemented till the completion of projects and beyond even in more celebrated and World Bank funded projects like the Sardar Sarovar, Nathpa Jhakri projects, leave aside the lesser projects.

... Ministry of Environment and Forests (MoEF) that is responsible for ensuring compliance with the conditions under which projects are given clearance has shown absolute inability to ensure compliance. An assessment done by Ashish Kothari, then member of the MoEF's Expert Advisory Committee (EAC) for the River Valley projects concluded in a study in 1998, "Data emerging from the records of the Government of India, collected by the regional offices of the MoEF, suggests that in a shocking 90% of the cases, project authorities had not complied with the conditions which their projects had been cleared... Our EAC assessed the state of monitoring and reappraisal of the dams cleared by the MoEF in the 1980s and 1990s.

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The most shocking fact that our EAC found was that, despite being told that the huge scale of defaulting (that) was taking place, MoEF rarely took stringent action, indeed on no occasion had it used its powers to halt construction and prosecute concerned officials even in cases of extreme violations of conditions".

As a Government of India Report (GOI Sept 1999, p 310), noted, "Environmental concerns continue to be regarded as disagreeable external imposition and they have not become parts of the project planning from the start, despite many guidelines and instructions to that effect." Indeed the whole

process of creating EIA and the public consultation process should be part of the decision making process, but that is far from the case even today.

In Sept 2006 India's Ministry of Environment and Forests amended the rules governing environmental impact assessment and public consultation process before projects are considered for environmental clearances, reversing some of the improvements achieved in earlier years. The changes involved significant dilution of the processes, reducing the possibility of proper environmental impact assessment or mitigation. Authors of a detailed review of the notification noted (ESG 2007, p iii), "The resulting legislation clearly subordinates environmental and social concerns to the interests of industry and investment".

To see if situation has improved in the twenty-first Century, let us take just one example, one of the largest dams being taken up in India in recent years, namely Polavaram Dam on Godavari River in Andhra Pradesh, also causing submergence in neighbouring (upstream) states of Orissa and Chhattisgarh. In that project, the environmental impact assessment is incomplete, is based on wrong and outdated data, full EIA has not been provided to the local people in the language

they can understand, there were serious violations in the public hearings conducted before the environmental clearance, in fact when people protested against violations, many were arrested, the neighbouring states have yet to give their clearances, and yet the project work has started and a few hundred crores have already

been spent, before court ordered stoppage of work¹³. It only goes to show where we stand even today.

Bhakra Dam: Environmental Impacts Bhakra Dam on Sutlej River in Northern India has been described in iconic terms among the large dams in India. A pioneering study of that project¹⁴ has described the serious environmental impacts of that project in terms of submergence of lands and forests, siltation in the dam, displacement, health impacts and downstream impact on fisheries and flood plain agriculture in India's Punjab. Most impacts remain unaddressed. Government of India's Comptroller and Auditor General has noted that though the money for the catchment area treatment for the project was spent, there was little credible evidence of its implementation. The report also notes¹⁵ that Bhakra had impacts across the border in Pakistan in terms of depletion of groundwater, decrease in soil fertility and adverse impacts on pastoral communities of Cholistan, in addition to other livelihood impacts.

Here it is worth noting that the people who suffer the ill effects of dams are almost invariably different than the people who benefit from the projects and people who face adverse impacts rarely benefit from the project. Decades after the Bhakra dam was completed, when in 1970s the then Union Irrigation Minister, Government of India, KL Rao visited it he recorded¹⁶, "it is curious how we handle our projects. The village of Bhakra on the bank of the river Sutlej was submerged. The Dam resulted in great suffering to the people of the village, but nobody took note of the people's representations. I found that the new village of Bhakra had neither drinking water nor electricity though surrounded by blazing brilliant lights. This was indeed unfair." The story is not much different for other large dams. Pong, Bhakra, Hirakud, Tawa, Bargi, Nagarjunsagar... - you name the dam and you will find that people affected there from are still fighting for R&R. Large dams also submerge forests, bringing further impacts in the process.

The work of Tarun Bharat Sangh in areas around Alwar District in Rajasthan over the last 22 years have shown

¹³ See for example, Gujja Biksham et al, *Perspectives on Polavaram: A Major Irrigation Project on Godavari*, Academic Foundation, New Delhi, 2006.

¹⁴ *Unravelling Bhakra*, p 193-205

¹⁵ *Unravelling Bhakra* p 206

¹⁶ See Rao, 1978, p 79

what dramatic changes are possible when communities take up building, rejuvenating and managing local water systems on a large scale. Such examples are available from a number of different regions in India, including from Gujarat, Tamil Nadu and others. They all show that non large dams options exist, they are viable, desirable, sustainable and more equitable than dams. Moreover, they do not involve the trade offs in terms of serious social and environmental impacts in one region to benefit another region.

From Prime Minister and the President of India to the farmers, everyone is certain that India's agriculture is in crisis. That is indeed the case. Everyone also agrees that every farmer would benefit from better water management. But the water resources development and management policies continue to be a prisoner of the agendas of large dam lobby, neglecting the other water resources development options, including new water saving technologies like the System of Rice Intensification

Impact on Rivers The World Bank in the 2006 report *India's Water Economy* said that India's rivers are *fetid sewers*. The GOI's Central Pollution Control Board said in 1981 that no rivers have potable water in plains area of the country. Dams in fact kill rivers – in case of most large dams, no water is allowed downstream from the dams for the river, for the environment or even for

downstream communities & economic / livelihood activities like fisheries. In India there is no regulation for downstream releases from large dams and as the World Bank noted¹⁷, "An important area where mindsets have to change is that of in-stream flows. Any water flowing out of a river basin is still seen by many water engineers as 'wastages'."

Social Impacts: who pays the costs Total reservoir area of India's 4528 large reservoirs is 4.42 million ha as per the latest estimates¹⁸. In 2000, the Planning Commission acknowledged¹⁹ about Water Resources Development that upto 25 million persons have been displaced by big water resources projects since 1950, "Almost half of the displaced persons are tribals who have least resources". Less than 50% have been rehabilitated – the rest pauperised by the development process. The actual numbers are more likely to be nearer to 35-40 million and proportion of those rehabilitated much lower.

The crisis of Agriculture From Prime Minister and the President of India to the farmers, everyone is certain that India's agriculture is in crisis. That is indeed the case. Everyone also agrees that every farmer would benefit from better water management. But the water resources development and management policies continue to be a prisoner of the agendas of large dam lobby, neglecting the other water resources development options, including new water saving technologies like the System

¹⁷ World Bank, 2006, p 61

¹⁸ *Dams, Rivers & People* My-June 2007, page 8

¹⁹ Govt of India, Oct 2000, p 89

of Rice Intensification and also not bothering about export of virtual water through export of water intensive products like Sugar and Rice.

So much so that even after statements in Five Year Plan after Five Year Plan, there is very little attempt to get better results from existing water infrastructure. India now has the largest irrigation infrastructure in the world. That infrastructure is giving some of the poorest results, India's Finance Minister said in his budget speech in 2005. The mid term appraisal of India's 9th 5 Year Plan had noted, "With a 10% increase in the present level of water use efficiency, it is estimated, an additional 14 m ha can be brought under irrigation from existing irrigation facilities". Gap between potential created and realised is over 25 m ha and is growing.

The World Bank report of 2006 quoted earlier said that annual requirement for repair and maintenance of India's water infrastructure is about USD 4 billion, that is about Rs 17 000 crores. That is less than the total annual water resources budget of India during 10th Plan. A tiny fraction of the required amount is being spent on actual repair and maintenance of that infrastructure. That is one of the reasons why India's irrigation infrastructure is performing so poorly. The 11th Plan working group report quoted above says that 15 % of all water resources budget should be reserved for Irrigation Maintenance Fund. That will be far from sufficient considering current investment levels and the resources required for repair and maintenance, but it is doubtful if the big dam lobby would allow even that.

And the paradigm shift to make people at the centre of water resources is not even on the agenda.

I guess we will learn the hard way.

In the End In the famous James Bond film *Golden Eye* Bond repeatedly destroys the vehicles he uses. A stunned computer programmer Natalya Siminova asked James Bond, "Do you destroy every vehicle you get into?" The answer of Bond, pointedly precise, was, "Standard operating procedure". India's water resources establishment is not known to act in James Bond style, but, if one were to ask them, "Do you destroy every river, every community you touch?", the answer should not be much different than that of the Bond in *Golden Eye*.

Famous Indian writer Arundhati Roy wrote²⁰ in the last monsoon of the twentieth Century, "Whether you love the dam or hate it, whether you want it or you don't, it is in the fitness of things that you understand the price that's being paid for it". The trouble is that there is little readiness to understand it even today.

Himanshu Thakkar

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²⁰ *The Greater Common Good*, p 62

Groundwater - India's Water Lifeline needs urgent intervention Govt is non serious about the crisis

Government's own figures show that Groundwater is India's water lifeline. That lifeline is in crisis situation and needs urgent intervention. However, even as the first National Groundwater Congress met on September 11, 2007, it is clear that government is non serious about attending to this situation that has been created due to its own acts of omissions and commissions. Attention to Rainwater harvesting, watershed development, local water systems (tanks, lakes, ponds, talabs, pokhars... there are many names to it, but they are all local water systems), wetlands, forests, floodplains and rivers, all part of existing groundwater recharging systems, can help sustain India's water lifeline. But the Local water systems, wetlands, forests, floodplains and rivers are facing systematic destruction in the name of development and at best lip service is being paid for their conservation.

Govt figures show that 85% of rural water supply comes from groundwater sources. More than half of the urban and industrial water supply comes from groundwater. Two thirds of irrigated area foodgrains production comes from groundwater irrigated lands. 80% of additional irrigated areas in last two decades have come from groundwater sources.

Why Groundwater is Water Lifeline Govt figures show that 85% of rural water supply comes from groundwater sources. More than half of the urban and industrial water supply comes from groundwater systems. At least two thirds of irrigated area foodgrains production comes from groundwater irrigated lands. Government says 80% of additional irrigated areas in last two decades have come from groundwater sources. In reality, as the cover story in this issue of "Dams, Rivers & People" shows, all the additions to the irrigated areas over the last twelve years have been coming from groundwater irrigation, and in fact all other sources of irrigation are on the decline. All these figures come from the government documents. The existing groundwater recharging systems listed above help sustain the groundwater lifeline and their systematic destruction is one of the reasons for falling groundwater tables. And yet 80% of the water resources budget for the 11th Plan is proposed for big dams. That cannot help sustain groundwater lifeline. In fact in many cases the big dams are reasons for the crisis. This is sure invitation for bigger trouble.

Misleading analysis Addressing a function in Delhi earlier in Sept 2007, the Union Water Resources Minister said, "This (groundwater) resource has come under stress due to its overexploitation". This is typical, incomplete and misleading analysis as it ignores the role played by existing groundwater systems and how they are getting destroyed. This is also a major factor behind depletion of groundwater levels, besides over exploitation. If the destruction of existing groundwater

recharging systems is stopped, the situation would certainly be better. But all over the country they are facing destruction. In fact the work of the Tarun Bharat Sangh and many such efforts in different parts of the country (some of them were awarded for their exemplary work on Sept 11, '07) have shown that when local water systems are rejuvenated, the decline in groundwater levels can be reversed even in arid areas like Rajasthan. Scientists have said that to address the issues like the Arsenic contamination of groundwater, rainwater harvesting and groundwater recharging is the best option. There is no policy for stopping the destruction of existing systems that help sustain groundwater recharge.

Wrong Prescription The Govt has been trying to regulate the use of groundwater through a top down, unaccountable, non participatory mechanism of Central Groundwater Authority, in existence since eleven years. But such a mechanism cannot regulate use of groundwater. The Central Authority has failed to achieve its objective. Only a bottom up mechanism starting from local community controlled units can possibly regulate use of decentralised source like groundwater.

What needs to be done We need dramatic, fundamental changes in the way we approach water resources. As the World Bank said two years ago there is dangerous all round complacency about groundwater. We need a clearly defined policy to ensure that the existing groundwater recharging systems are not destroyed. Creation of more such systems has to be the focus of our water resources development policy. Our plans and budgets need to reflect such policy, but they clearly do not at the moment. On management front, we need a legally enforceable regulatory system that has community at the focus of regulating use and management of groundwater. Our understanding of science of groundwater aquifers and use of that scientific understanding in groundwater management needs to improve. Use of water saving techniques like the System of Rice Intensification needs to be given more serious attention as it has big potential in reducing groundwater use. The National Ground Water Congress on Sept 11 provided an opportunity to address these issues. Unfortunately it was not used. The advisory committee for artificial recharge of groundwater met on Sept 12 after 14 months, which also reflects the non seriousness of the govt.

SANDRP

DAMS

Mahasamund farmers propose alternative dam The farmers of Barbasvillage, Basna Block, Mahasamund district, Chhattisgarh, have given a memorandum to the Chief Minister, opposing the Irrigation Dept proposal to build a Rs 1.87 crore dam project in their village as it will submerge 240 ha of land and affect four villages. Instead they have proposed an alternative dam that will submerge only 120 ha of govt land. The CM has sent it to the irrigation dept. (Deshbandhu 19x07)

HYDROPOWER

New hydropower policy The government is planning to allow hydroelectric projects to undertake merchant sales (market-oriented spot transactions) of up to 40 percent of the saleable energy. The latest policy reform decision is aimed at promoting private investment in the hydro sector. According to a Power Ministry official, the move would promote operations of hydro projects where the cost of power in initial years of operations is very high. Merchant sales would enable projects to earn huge premiums on sale of power in the spot market. The official said the changes have been incorporated in the new hydro policy that the ministry has finalized (but not yet made public). It has also prepared a Cabinet note proposing the changes for implementing the policy. The project developers would have to give specific timelines for completing a project under the new guidelines. Projects that do not conform to the prescribed timelines would lose the incentive of merchant sales in a graded manner. Delay of every six months in the commissioning date would result in reduction of merchant sales by 5 percent.

The new policy is likely to propose that for R&R of the affected people, the developer will give 1% additional free power (over and above the current 12% free power) to the state govt and state govt will add revenue from 1% of free power out of its current 12% free power share. This both will go into a corpus that will be used for continuous stream of benefits for the areas affected. The 1% additional free power that the developer gives will be allowed to pass on in the form of increased tariff. For this an amendment to the 1985 govt order that stipulated the 12% free power will be made. The developer will also have to provide 100 units of free power per month to each affected family for a period of 10 years from the date of commissioning of the project. The developer will also have to bear the state govt's share in the Rajiv Gandhi Green Vidyutikaran Yojana for the electrification in a radius of 10 km from the power house. (UPI 19x07, The Economic Times 24x07)

World Bank in Action The World Bank is clearly getting very active to support big hydro projects in India, not learning any lessons from past experiences and the performance of its recently funded projects like Allain

Duhangan, Nathpa Jhakri, Rampur, Sardar Sarovar and the proposed funding of Vishnugad Pipalkoti Project. These issues were highlighted through a number of presentations, including one by SANDRP at the first ever Indian People's Tribunal on World Bank in India in Sept 2007. The Bank was invited to give its side of the story at the IPT, but the Bank said yes, Bank officials had shown keen interest in attending the IPT, but ultimately the Bank developed cold feet and decided not to attend the IPT, nor respond to the issues raised in the SANDRP presentation. Now it seems the Bank has taken up a study of the problems related with the Environment Impact Assessment of the hydropower projects in India and has assigned the study to a team lead by consultant Red Anderson. The consultant is claiming that he has 18 years experience in EIAs of hydro projects in IFC and other projects. But with IFC's own track record being so poor (see what is going on in the IFC funded Allain Duhangan HEP in India), this does not show great credibility. (WB IPT, MATU, Kalpavriksh, SANDRP)

Protest fast in Uttarakhand A number of organisations in Uttarakhand undertook a 72 hours fast on 9-12 Oct '07, at Devprayag Sangam, on the banks of river Bhagirathi and Alaknanda, this is where the Kotli Bhel projects are being implemented. The Fast is lead by MATU Jan Sangathan with support from Ganga Rakshak Sangharsh Samiti and other organizations and local people. Vimal Bhai of MATU started the fast on 9th Oct '07. On 10th Oct 20th a meeting was organized and it was attended by some senior and eminent peoples like Dr. Giridhar Pandit state joint secretary CPI, Mr. J. P. Pandit ex-principal of Omkarananda College, Acharya Shailendera Shastri of Devprayag, Dr. Prabhakar Joshi Senior Journalist Dainik Jagran and the Gram Panchayats President. SANDRP wrote to the Chief Minister, raising a number of issues, including those of inadequate EIA & public consultations & issues of carrying capacity, demanding that till all such issues are resolved, the projects should be put on hold. (Matu 10x07)

Clearance to Athirapally HPP challenged in HC A public interest petition has been filed before the Kerala High Court seeking to quash the environmental clearance given for the proposed 163 MW Athirappilly hydroelectric project. The petition sought to restrain the Kerala State Electricity Board and the govt from going ahead with the project. The petitioner, Geetha of Chalakudy, said the clearance was given on the basis of an environmental impact study by Water and Power Consultancy Services, which was unreliable, as it was based on an earlier report of the Tropical Botanical Garden and Research Institute. The petitioner said that the environmental clearance hearing had been a farce. The agency did not conduct any study as required by the law. The petitioner said that if the project was implemented, biodiversity of the area would be lost. The petition has been accepted and notices have been issued. (The Hindu 16x07)

HYDROPOWER PROJECTS - JAMMU & KASHMIR

Sawlakote Hydropower project in High Court The Jammu High Court has adjourned the hearing on 1200 MW Sawlakote Power Project till Nov 5, '07. In a petition filed by Sawlakote Prosjektutviklingas and others Vs State & Ors, Senior Advocate Dr Abhisek Manu Singhvi and others appearing for the petitioners started arguments. After hearing counsels for the petitioners and Advocate General appearing for the State, the High Court bench issued notice to State through Chief Secretary and Chief Engineer Power Development Corp.

In the meantime, HC directed State not to call new global tender and also directed Chief Engineer Power Development Corporation that he will maintain status-quo till next date of hearing. In the petition it has been submitted that the petitioners are members of Sawlakote Consortium entrusted with the works of designing, executing and completing the 1200 MW Sawlakote Hydro Electric Project in Doda district for a cost of Euro 763 Million which consortium has been duly approved by three successive Cabinets of State on April 19, 2001, Dec 21, 2005 and April 4, 2006 respectively as well as approved by the Power Development Corporation. Present petition was being filed as the petitioners came to know through news-papers reports on Nov 16-17, 2006 that J&K Government acting on an alleged report of Cabinet Sub-Committee has decided to cancel the EPC contract of the petitioners with the PDC and also to float fresh global tenders for the contract.

It was submitted that the petitioners, who having spent considerable money, time and efforts on the project for more than seven years were never informed of the constitution of scope of reference of the Cabinet Sub-Committee nor were ever called upon by the State or the Cabinet Sub-Committee to address and respond to any issue or queries on the basis of which the impugned decision has been arrived at. The petitioners submitted that it was only after they sent a letter to Chief Secretary of State upon coming to know about the constitution of Cabinet-Sub Committee through media reports that they were offered to assist the Committee with factual information related to the project development contract and consortium structure.

The petitioner said that the impugned decision of State Gov was arbitrary, capricious, whimsical, violative of the principals of nature justice and against public interest besides being based on uninformed and untenable reasoning. The petitioners have prayed for quashing the impugned decision and restraining the respondents from acting upon in any manner in furtherance of the impugned decisions against the petitioners. (Daily Excelsior 181007)

Pakal Dul gets wildlife clearance The proposed 1000 MW Pakal Dul Hydropower project to be built on the Marsudhar, a tributary of the Chenab, has been given clearance by the National Wildlife Board headed by the

Prime Minister. The project will affect 346 ha of the Kishtwar National Park and it has been proposed to redefine the core area of the park, keeping about 35 villages around the park out of the newly delineated area. In lieu of the impact on the National Park, NHPC, the developer of the Rs 6000 crore project, is expected to provide Rs 236 crores to the state wildlife department. The project will not be referred to the Supreme Court for clearance. (Indian Express 25x07)

J&K to revive Ujh hydel project The Jammu & Kashmir government has decided to take up the 280 MW multipurpose Ujh hydroelectric power project. The project report of Ujh was prepared way back in 1960 but it was not taken up by the Central Electricity Authority as it was merely a storage project. The J&K government informed the Centre that, according to Wapcos's pre-feasibility report submitted in August 2004 and the requirement of irrigation and drinking water, the project had now become viable. Further, the state urged the Central government to facilitate the implementation of the project and give directions for undertaking the survey and investigation of the multipurpose project. The project had been identified under the 50,000-mw hydropower initiative. (Project Monitor 22x07)

HYDROPOWER PROJECTS – HIMACHAL PRADESH

NTPC's Koldam faces delays The Koldam Hydro Power Project (HPP) in Himachal Pradesh is facing delays due to land slides, delays in land acquisitions, time taken in settlement of rates with the contractor and the need to do more and deeper grouting. The project of NTPC (National Thermal Power Corp) that was scheduled to start generation in Nov 2008 is now expected to do that by July 2009 according to NTPC officials. (Mint 22x07)

"File murder case against SJVN, Gammon" People around the under construction World Bank funded 412 MW Rampur project are angry with Sutlej Jal Vidhyut Nigam and Gammon India Limited for their negligence of the safety of the labourers working at the Project, leading to death of one of the Nepali labourers on Oct 17. They have demanded that a case of murder due to negligence should be filed against SJVN and Gammon India. Central Industrial Trade Union has alleged that the power developers and contractor companies are violating labour laws in almost all ongoing power projects and they are not providing insurance to the workers working at the projects. (Divya Himachal 19x07, 20x07)

HC orders stoppage of work on Allain Duhangan The Himachal High Court ordered stoppage of work on the World Bank funded Allain Duhangan Hydropower project on Sept 11, 2007. This was following a petition by the local people alleging that the company did not have the no objection certificate required from the local gramshabhas and the company had been involved in repeated violations of the Forest Conservation Act and other legal provisions. (Divya Himachal 120907)

HYDROPOWER PROJECTS – NORTHEAST INDIA**Work on Dzongu HPPs stopped, Sikkim CM bows**

The Chief Minister of Sikkim, Mr Pawan Chamling has finally agreed to look into the grievances of the Lepchas agitating against proposed hydroelectric power projects at Dzongu in North Sikkim, a place considered sacred by the Lepchas. Following a meeting with the agitators on Oct 18 Mr Chamling said: "No development will come at the cost of the culture, tradition and identity of the Lepchas. The state government has stopped work on all the five hydro power projects till the review committee appointed in the matter completes its report." Urging the Joint Action Committee, which is supporting the Lepchas' agitation, to view the issue and suggest necessary steps to find reasonable solution Mr Chamling said: "Now the Affected Citizens of Teesta should participate in the review process so that the government can find an appropriate solution and can fulfill the wishes of the Lepchas without having to face legal and other complications." The Opposition is viewing Mr Chamling's "about turn" on the issue as a result of mounting political pressure. They are also inclined to view it as the chief minister's move to appease the Lepcha community before the forthcoming panchayat polls in the state. Various Lepcha associations including the Affected Citizens of Teesta, Indigenous Lepcha Tribal Association, Rong Ong Prongzom, Darjeeling Lepcha Youth Wings, Concern Lepchas of Sikkim and various other associations are agitating against the power projects. The Lepchas are primarily nature worshippers and so the mountains, lakes, rivers, hills, trees in Dzongu are sacred to the Lepcha community. (The Statesman 20x07)

NTPC Arunachal HPPs set to be scrapped The government of Arunachal Pradesh plans to scrap the hydroelectric projects awarded to NTPC Ltd, because the state-owned firm is not "keen and committed to develop the projects". NTPC had not "responded to our demand of an upfront payment of Rs 225 crore and not done any work on the site. Though it has now been a year, they are yet to carry out even the geological and resettlement and rehabilitation studies for the site. We are planning to re-tender the two projects," said T. Norbu, Arunachal power secretary. The projects have a combined capacity of 4,500 MW. Arunachal Pradesh wants NTPC to pay Rs 5 lakh per MW as the upfront payment.

Power projects in the state are now awarded on competitive bidding basis, wherein one of the main criteria of awarding the project is the upfront payment offered to the state government along with the free power and contributions to state funds for area development.

"We can't make this payment because we are a public sector unit and (have to follow the) the guidelines laid down by the Central Vigilance Commission" said a

senior NTPC executive. NTPC had signed an agreement on 21 September 2006 with the state government for the implementation of the two projects at Etalin (4,000MW), and Attunli (500MW) at an estimated total investment of Rs 22500 crore. Other state-owned firms that won similar projects from Arunachal Pradesh at the same time were National Hydroelectric Power Corp (4,500 MW) and North-Eastern Electric Power Corp. (1,230 MW).

Norbu said NHPC has already made its upfront payment. "We do not want to depend on NTPC for the development of these projects," he added. (Mint 16x07)

Protestors unite against Mega Dams in Northeast

Protesting against the Mega Dams in North East, more than 350 participants from various civil society organisations, people movements, students' Unions from different parts of the North East Region have raised their voice against NEEPCO (North East Electric Power Company) and other related institutions involved with the construction of mega dams in the region in front of NEEPCO Guwahati office on 15th October. People from different parts of North East including many activist and students gathered in unison under the aegis of 'United Protest Against the Construction of Mega Dams in North East India.' This massive protest was in response to the Ministry of Environment & Forest, New Delhi and NEEPCO attempt to clear environment clearance for the various projects in the region without gaining the free, prior informed consent of the local people. (www.morungexpress.com 15x07)

Dibang affected protest The Dibang Basin Welfare Committee has moved the Dorjee Khandu government to provide proper rehabilitation package to families which will be affected by the proposed 3000 MW Dibang Valley multipurpose project. The committee, formed in July to work as a facilitator between the residents of Dibang and the National Hydroelectric Power Corporation — the executor of the project — submitted a 10-point memorandum to the CM. "We placed our demands — like compensation for the 'fully-affected families' whose names are included in the NHPC's resettlement and rehabilitation plan. Fully affected families should have been given 0.8 ha of homeland, two ha of cultivable land and Rs 12 lakh each while the partially-affected families should have got Rs 6 lakh each," Committee members said. The committee has also sought a "community package". (Telegraph 20x07)

PEL to set up 100 MW Gongri HEP in Arunachal Patel Engineering Ltd has signed an MoU with Arunachal Pradesh government for setting up the 100-mw Gongri hydroelectric power project in West Kameng district. The project will be implemented on BOOT basis for 40 years. The expected revenue from the project is Rs 120 crore a year. The company is already executing the 600-mw Kameng HEP project for NEEPCO. (Project Monitor 25x07)

SOLAR POWER**Solar Power Edges Towards Boom**

Solar power could be the world's number one electricity source by the end of the century, but until now its role has been negligible as producers wait for price parity with fossil fuels, industry leaders say. Once the choice only of idealists who put the environment before economics, production of solar panels will double both next year and in 2009, according to US investment bank Jefferies Group Inc, driven by government support especially in Germany and Japan. Similar support in Spain, Italy and Greece is now driving growth in southern Europe as governments turn to the sun as a weapon both against climate change and energy dependence.

Subsidies are needed because solar is still more expensive than conventional power sources like coal, but costs are dropping by around 5 percent a year and "grid parity", without subsidies, is already a reality in parts of California. Very sunny countries could reach that breakeven in five years or so, and even cloudy Britain by 2020. "At that point you can expect pretty much unbounded growth," General Electric Co's Chief Engineer Jim Lyons told the Jefferies conference in London, referring to price parity in sunny parts of the United States by around 2015. The United States' second largest company, GE is a big manufacturer of wind turbines and wants to catch up in solar.

Cutting Costs Grid parity is considered vital for freedom from potentially fickle governments for support. Established solar power companies are more optimistic. The crux is how fast the industry cuts costs and how fast power prices rise. European power prices neared all-time highs recently, driven by record oil prices. The industry could halve costs and achieve parity in significant markets including the United States, Japan and parts of southern Europe by 2012, said Erik Thorsen, chief executive of the world's biggest solar power company Renewable Energy Corp. "If grid prices go up at the present rate it could happen before," he said. REC expects to halve costs on new production by 2010. German solar power company Q-Cells AG, the world's second biggest maker of solar cells, expects similar cuts by making more components itself, thinner than before, and by using cheaper techniques for processing the silicon raw material.

The solar sector has grown at 40 % per year despite a shortage of silicon, but that bottleneck should ease over the next two to three years, said executives. But all the growth is from a tiny base. The sun supplies just 0.3 percent of electricity even in market leader Germany. It doesn't even register statistically outside Germany.

PV Solar Power Grows Fast in Spain Photovoltaic solar power plants are springing up throughout Spain,

capitalising on special tariffs for renewable energies and exceeding the government's expectations. Spain has already achieved 80 % of the target. With the current momentum, Spain will be over its target for 2010 of 400 MW of PV power by next summer, possibly having 800 - 1,200 MW.

Feed-in tariffs, initiated in 2004 to reach the European Union's goal of increasing renewable energy use to 20 % by 2020, guarantee energy produced from renewable resources will be bought at three times the normal market value for 25 years and the utility has the obligation of giving you a connection point to the grid. It is speculated that much of PV's success had to do with more companies lobbying for incentives.

Spanish electrical installation company Elecnor's photovoltaic department is setting up 80 MW of PV installations. Acciona Solar Power is developing a 46 MW plant in Portugal. The company doubts they will be able to reach 1,200 MW next year, saying PV cells are not abundant and are expensive. China's getting big on supplying PV cells, Spain has factories, but it's still very limited capacity - every factory can provide 40 or 50 MW a year... for another 900 MW they need a lot of supply, industry sources say.

All factors included, PV solar plants can cost about 6 million euros (US\$8.47 million) per MW, about 30 % more than expensive than solar thermal power and roughly five times as expensive as a coal-fired plant. "In about 12 years plant production costs will be paid off," said director of PV installation company Avanzalia's 13.8 MW plant in Salamanca, which cost about 100 million euros. At 1,200 MW, PV power would still only account for 0.4 percent of total power.

Sunny Spain lags cloudy Germany Germany, with about half as many sunny days as Spain, initiated a similar incentive scheme in 2000 and has 3,000 MW of PV power.

Peers Piske, director of German PV installation company City Solar Group's 20 MW plant in Beneixama, Spain, said Germany's PV output is due to a great number of homeowners with small installations capitalising on the tariffs to sell to the grid. In Spain there are more big plants of 1 to 25 MW. Incentives in Germany have led to a total of 250,000 jobs in the renewable energy sector. Spain estimates that at the current production rate it will have 200,000 new jobs by 2010. Investors and politicians are optimistic that in six years the incentives will no longer be necessary. Costs are expected to fall as competition spawns cheaper, more efficient solar technologies. Industry Ministry officials said that once there are 1,200 MW of PV solar power, the tariff rate will be reduced by 5 % each year. (REUTERS 11x07, 22x07)

IRRIGATION**Maharashtra: Privatisation draws protests, interest**

Maharashtra's experiment with privatising its first ever irrigation project has received opposition from civil society groups and also an overwhelming response from the corporate sector as 12 major corporates including Reliance, Mahindra, Godrej, ITC, IL&FS and other industrial majors have expressed interest in completing the Neera-Deoghar Dam in Pune district in lieu of rights over the water distribution, rights for contract farming in the command area and developing a mini hydroelectric project. There are also differences on the issue within the cabinet. The first pre-bid meeting of senior state government officials from the water resources ministry will be held on Oct 27 to finalise the terms and conditions in the bid document.

The Neera-Deoghar project has storage capacity of 10 thousand million cubic feet (TMC) with an assured rainfall in the catchment area. The Maharashtra government has already spent around Rs 700 crore and has built the dam and it will require another Rs. 600-700 crore to develop the distribution channels. But the water stored in the dam is wasted as the state govt has not developed the distribution system. Now it claims that it does not have funds and that is why proposal for privatising the irrigation project came forward. This raises serious questions about the project planning by the state govt and the official who are responsible for such shoddy planning should be held accountable for this, in stead of privatizing the project.

The state govt officials claim, "If we have to complete all the irrigation projects in the state, then we will require at least around Rs 40,000 crore over the next 10 years and we hope that nearly Rs 10,000 crore can be raised through privatisation of dams".

The Nationalist Congress Party MLA Ramraje Naik-Nimbalkar is the minister for water resources in Krishna Valley and for the rest of the state NCP president Sharad Pawar's nephew Ajit Pawar (hails from Pune district) is the minister. While Naik-Nimbalkar is in favour of privatisation, Pawar is opposing the proposal. Though the project is part of Naik-Nimbalkar's ministry, it is Pawar Jr, whose words carry more weight both in the cabinet and the party. These differences put hurdles in the way of privatisation. (Business Standard 20x07)

Nagarjunsagar Project Union Minister of Water Resources informed the Lok Sabha on Aug 13, '07, "A project proposal namely 'Andhra Pradesh Water Sector Improvement Project' for assistance of Rs. 2250 crores has been posed to the World Bank by Department of Economic Affairs. Nagarjuna Sagar Project is one of the components of the APWSIP. The project envisages irrigation of 4.03 lakh acres Gap Command Area." (ESG update, 240807)

Bharat Nirman In reply to a question in Lok Sabha on Aug 22, 2007, Union Minister of state for Planning said that for the Irrigation component of the Bharat Nirman Project, following ongoing World Bank Assisted water resources projects are available for use.

Project Name	Date of Agreement	Date of Completion	Amount US \$ m
Rajasthan Water Sector Restructuring Project	15.3.2002	31.3.2008	125.00
Uttar Pradesh Water Sector Restructuring Project	8.3.2002	31.10.2007	109.10
Karnataka Community based Tank Management	6.6.2002	31.1.2009	73.80
Madhya Pradesh Water Sector Restructuring Project	30.10.2004	30.3.2011	394.00
Maharashtra Water Sector Improvement Project	19.8.2005	30.12.2012	325.00
Tamil Nadu Irrigated Agriculture & Modernisation & Water Bodies Restoration	23.1.2007	31.3.2013	485.00
Andhra Pradesh Community based Tank Management	19.4.2007	31.12.2012	189.00
Total			1700.90

(ESG update 070907)

INTER STATE DISPUTES

Kerala ok to Neyyar water to TN The Kerala govt has given green signal to supply water from the Neyyar irrigation project to Kanyakumari district in Tamil Nadu. The Kerala water resources minister has been authorised to take necessary steps in this regard, an agreement will be signed between the two states. (The Hindu 25x07)

GROUND WATER

NREGS helps GW recharge The works undertaken under the National Rural Employment Guarantee Scheme in a number of districts like Bolangir (Orissa), Sidhi (MP), Dungarpur and Karoli (Rajasthan) and Anantpur (Andhra Pradesh) is helping increase groundwater recharge in these areas, according to Richard Mahapatra of Centre for Science and Environment. Wide spread water conservation projects like desilting of ponds and building of anicuts in Dungarpur has made it possible for many farmers to take two crops and water tables are going up. Water conservation works is to be given top priority under NREGS, but in areas like Bundelkhand, where other works like roads and buildings are taken up, people are suffering the impact of drought. (The Hindustan Times 24x07)

GROUND WATER CONTAMINATION

GW near Union Carbide plant contaminated Three organisations working for the victims of the 1984 Bhopal gas disaster have exposed data from the govt pollution Control laboratories to show that the groundwater near the plant is contaminated with toxic chemicals and this groundwater is being consumed by some 25000 people.

They have also shown how the govt was trying to manipulate the testing schedules to ensure that this information is not made public. (The Hindu 23x07)

WATER BUSINESS

Community Files Police Report Accusing Coca-Cola of Water Theft and Pollution Over 600 people marched and rallied against the Coca-Cola bottling plant in the village of Sinhachawar in Ballia district in India on Oct 24, demanding that the plant be shut down permanently. The community has accused the bottling plant of pollution and also illegally occupying land held by the village assembly.

A visit by community members to the factory premises in May 2007 found the bottling plant indiscriminately dumping its hazardous waste inside and outside the factory premises. In 2003, the Central Pollution Control Board assessed the sludge at eight Coca-Cola bottling plants, and found them all to contain excessive levels of lead, cadmium or chromium. As a result, the CPCB ordered the Coca-Cola company in India to treat its waste at all its bottling plants as industrial hazardous waste, and deal with it accordingly. Four years later, the Coca-Cola bottling plant in Sinhachawar has failed to follow the orders. In particular, the dumping of such hazardous waste violates the Hazardous Wastes (Management and Handling) Rules, 1989 from the Ministry of Environment and Forests.

"We are demanding that the Coca-Cola bottling plant cease its operations permanently because they are destroying our land and water, the very source of our livelihoods," said Mr. Baliram Ram of the Coca-Cola Bhagao, Krishi Bachao Sangharsh Samiti.

The Coca-Cola bottling plant in Sinhachawar has also built its boundary walls encompassing some land that is owned by the village assembly. In Dec 2005, villagers noticed that the Coca-Cola bottling plant had blocked access to a public road that went through the bottling plant. The villagers forcibly removed the gates placed by the bottling plant on either side of the road. The community is alleging that the Coca-Cola bottling plant illegally occupies another 1.5 acres of village assembly land. The community is also concerned about water shortages in the area as a result of the extraction of water by the Coca-Cola bottling plant. The area is already experiencing water shortages.

The bottling plant in Sinhachawar is a Coca-Cola franchisee owned unit operated by the Brindavan Bottlers Limited, which is owned by India's largest bottler of Coca-Cola, the Ladhani Group of Companies. The bottling plant is in the process of being bought by the Hindustan Coca-Cola Beverages Private Ltd, the subsidiary of the Coca-Cola company.

The protest at the Coca-Cola bottling plant came a day

after another demonstration at the District Magistrate's office in Balia on October 23 where community members presented their demands to the District Magistrate.

The head of the village council, Ms. Chinta Devi, has led the campaign to permanently shut down the plant. Last month, the union of village council heads in the district passed a resolution against the Coca-Cola bottling plant, insisting that it be shut down.

The protest at the Coca-Cola bottling plant ended after community members lodged a police report accusing the plant of pollution, illegal land occupation and theft of water. (www.indiaresource.org 25x07)

REVEALING QUOTES

"No country has yet managed to reduce energy use while raising gross domestic product... Growth is a political sedative, snuffing out protest, permitting governments to avoid confrontation with the rich, preventing the construction of just and sustainable society."

George Monibot (The Hindu 101007)

"Ignorant of the risk to which he puts India, Prime Minister Dr Manmohan Singh, for instance, is pressing forward... to build hundreds of new large dams, ignoring hard data that suggests that large dam reservoirs may be a major source of methane emissions released by the rotting vegetation in submerged valleys. Predictably, Indian dam experts deny any such risk and, in collusion with bureaucrats and contractors, they busy themselves buying time for lucrative projects..."

Bittu Sehgal (Deccan Herald 220707)

"The energy grid in Brazil for electric energy generation is quite clean It's not based on coal-fired power plants, it's based on hydropower. But that doesn't mean we don't have emissions. We are big emitters. That's why we are taking action to diminish CO2 emissions to the atmosphere."

Marcelo Ketzer, associate professor of geology, Pontifical Catholic University of Rio Grande do Sul, Brazil (USINFO 060807)

TWO NEW PUBLICATIONS WITH SANDRP

Bhakra: Parat-der-Parat Ek Padtal

in HINDI,
by Shripad Dharmadhikary, Swati Seshadri, Rehmat,
Translation: Vinit Tiwari,
Abridged from earlier Manthan book: Unravelling Bhakra
Published by: Books for Change,
2007, p 196, Rs 100/-

Alternative Power Planning: 20 Questions,

English
Prayas and Kalpavriksh,
2007, p 36, Rs 20/-

AGRICULTURE

National Workshop on Rainfed Areas The National Workshop on *New paradigm for rainfed farming – redesigning support systems and incentives* in Delhi during Sept 27-29 made a plea to the govt to focus its resources in enhancing the productivity of rainfed areas. The Workshop was jointly organised by Watershed Support Services and Activities Network (WASSAN), Centre for Sustainable Agriculture (CSA) and Indian Council for Agriculture Research. The workshop highlighted the need for allocating greater share of resources and having a separate National Water Policy for Rainfed areas, among other issues. It was shown that if govt support systems are developed to increase carbon content in the rainfed soils, it will help increase the use of rainfall as soil moisture, increase the productivity of the rainfed crops and at the same time help reduce the global warming. A presentation by Dr Rupela of ICRISAT showed how it is possible to attain a productivity of 5.1 T per ha (compared to national average of 1.1 T per ha) in rainfed soils consistently for 33 years, supporting 21 persons in the process (compared to 4.8 persons currently) and yet the productivity is still increasing. Among other reasons, this was possible due to sequestered carbon to the extent of 330 kg per ha a year upto the depth of 120 cm. ICRISAT's research has shown that legumes in general and pigeon pea in particular have the ability to sequester more carbon in tropical soils. 60% of India's net sown area continues to remain rainfed and considering that over 60% of irrigated area is dependent on groundwater, which too can be recharged through such measures, the National Workshop urged paradigm shift in National Water Policies, plans and programmes. (SANDRP, The Hindu 24x07)

AP tribal women's efforts Eleven tribal women of Warangal district in Andhra Pradesh have transformed a six acre land that was previously used as a dumping yard into one producing fruits and vegetables that is able to sustain all of them. Their produce is largely organic as they do not use chemical fertilisers or pesticides. (The Tribune 21x07)

Organic Subsidy in Vidarbha? Maharashtra govt has proposed to the Prime Minister's office to include a scheme to offer subsidy to small and marginal farmers in Vidarbha who are ready to adopt organic farming. The proposal is to waive the loans of such farmers over three years. It is expected to cost the govt Rs 150 crore and benefit 1 lakh of the region's 17.6 lakh cotton farmers. It is hoped that this will bring down the cost of cultivation and at the same time fetch higher price for the produce. In Dhule district, 700 farmers have taken up organic cotton cultivation since 2002 and are able to get Rs 22-23 per kg of cotton, compared to the minimum support price of Rs 18 per kg. However, it is doubtful if the Rs 2000 crore GM seed lobby of Vidarbha will allow this to happen. Ram Kalaspurkar heads the Yavatmal based

Vidarbha Organic Farmers Association, a collective of 120 farmers in Yavatmal, Amravati and Wardha districts, growing organic crops over 3000 acres. He says, the natural seeds are an endangered species in Vidarbha because the state pushed modified seeds and the state will have to support such efforts over longer period so that adequate quantity of seeds are available. (The Hindustan Times 23x07)

HC moved to hike cotton MSP The Nagpur bench of the Bombay high court will hear arguments on an application to hike prices of a crop, possibly for the first instance of its kind. The criminal application was filed by Vidarbha Jan Andolan Samiti, charging the state government of ignoring farmers community that led them to take the extreme step of suicide. The petitioner claimed that the government failure to increase 'minimum support prices' of cotton to a substantial level has led cotton-growers to suffer severe losses. Due to the advent of BT cotton variety, farmers have to invest more, as the new variety consumes more water, destroys quality soil and is costly. (The Times of India 22x07)

Drought in Bundelkhand 4 of the 7 Bundelkhand districts, namely Mahoba, Banda, Chitrakoot & Lalitpur figure in the list of 8 districts declared as drought hit in Uttar Pradesh this year. The best option for water conservation in this region is check dams and bunds, says state Agriculture Production Commissioner Anis Ansari. And yet the union govt is pushing the Ken Betwa River Link as the solution for this region. Out of net sown area of 20 lakh ha, rabi crop is grown in 17.48 lakh ha. Rabi wheat productivity is 1.911 T per ha compared to state average of 2.766 T per ha. (The Hindu 24x07)

Agro Ecologic Zones in Punjab According to Dr Inder Abrol, Director, Centre for Advancement of Sustainable Agriculture, Punjab can be divided into three distinct agro ecological zones as follows.

	Kandi Area	Central Zone	Western Zone
Characteristics	Largely rainfed, submontane zones, like the neighbouring Himachal Pradesh, J&K, Uttarakhand	Dominated by Rice Wheat cropping pattern	Dominated by Cotton based cropping pattern
Problems	Drought, wide spread erosion, migration, etc	Declining water tables & soil & water quality	Rising water table, saline groundwater and the adverse impact of agro chemicals/ pesticides

(Indian Express 24x07)

Flown-in organic food rule change Food flown into the UK will be stripped of its organic status unless it meets new stricter standards, the Soil Association said. This has been suggested keeping in mind the contribution to global warming by long distance transportation. The association, which certifies 70% of the UK's £1.9 bn organic food, says firms must show trade brings benefit to developing world farmers. (BBC 25x07)

THE PAKISTAN PAGE

Pakistanis Challenge World Bank Pakistan's activists say the World Bank has yet to make good on promises to fix flaws blamed for lost lives and livelihoods along the world's largest irrigation system. "The problems are still there, even after the bank went through the exercise of investigating them," said Mustafa Talpur.

At issue is USD 285 million in financing they approved in 1997 to support a 25-year, USD 785 M Pakistani bid to improve irrigation on 14.3 M ha of agricultural land along the Indus. Large-scale irrigation has brought the "twin menace" of extensive waterlogging and salinity. Farmers in southern Sindh -- already among the country's poorest people -- saw their livelihoods rot with the earth. Drains stretching over dozens of miles were built to solve these problems but have "brought their own social and ecological problems", inspectors said.

In 2003, vast swathes were flooded and more than 300 people died when an unusually high Indus slammed up against sea water sent surging inland by an offshore cyclone. The following year, people hit by the calamities complained in writing to the inspection panel, saying the lender broke its own policies on the environment, project supervision, local consultation and rules on the resettlement of local people, complainants charged.

Inspectors, in a July 2006 report, said locals' grievances had merit. Bank managers said they spent USD 18 M in 2004-2006 on improving living conditions in areas harmed by the national drainage project (NDP). They proposed further measures through 2016 to combat flooding and improve irrigation and drainage.

Complainants have yet to receive compensation for lost relatives, assets and earnings, Talpur added. Talpur, in meetings with the World Bank staffers, and executive directors from the bank's European shareholders, demanded that the action plan be revised in consultation with local communities and that drainage routes be corrected to avoid future problems.

Federal officials pushed through the national drainage project over objections from the provincial government in Sindh. Bank inspectors said disunity at the Pakistani end undermined the lender's efforts to ensure compliance with safeguard policies. Talpur saw it differently, "The bank financed this project and it has direct responsibility. Its foreign consultants designed the project and their faulty design, especially their selection of disposal routes, caused our problems".

Inspectors, in their report, said that in at least one case locals rightly argued problems could be avoided by allowing water from the Indus to reach the Arabian Sea naturally rather than forcing it into human-made conduits. Their suggestion was not taken up. An overhaul of the drainage infrastructure awaits analyses of 30-plus proposals. (IPS 24x07)

18 MW Naltar hydro project Commissioned President inaugurated the Rs 1.36 B 18 MW Naltar hydro power project at Gilgit on Oct 23. The project completed in four years at Naltar near Gilgit, is the biggest hydro power project in the Northern Areas constructed through a Chinese firm under the supervision of Water and Power department. (Associated Press of Pakistan 23x07)

President opens Sadpara HPP President inaugurated a hydel-power station at the Sadpara dam project on Oct 24. He said that by next year three more HPPs would be completed at the place to produce 17 MW power. Later, talking to members of the Northern Areas Council, the president said he would try to get the diversion of the Shatung canal included in the Sadpara dam project. Northern Areas Legislative Council member Wazir Willayat Ali told the president that 60 per cent water in the under-construction Sadpara dam project had to be diverted from the Shatung canal, but Wapda had dropped the scheme which would adversely affect the dam. (Dawn 25x07)

World Bank proposes bar on Wapda The World Bank has said that government bodies like Water and Power Development Authority should not be allowed to execute mega projects including large dams. The proposal was informally submitted to the government during meeting chaired by Deputy Chairman, Planning Commission.

The Bank officials were of the view that it has been practiced in many countries of the world that after planning and approval of the projects, governments establish companies dedicated to plan, design and execute projects in a professional manner which needs to be replicated in Pakistan.

The World Bank has found that corruption alone costing more than 10-15 percent of mega project value of worth Rs 100 billion over Medium Term Development Framework period. The defective contract documents and corrupt contracting procedures, lack of protection against adverse physical conditions and processes external to actual contract, delays in payments to contractors, and absence of adequate credits, problems of bonding and insurance, restrictions on imports and foreign exchange constraints with unfair competition from contractors and consultants remains the major challenges in delivering mega projects by these institutions Bank officials said.

World Bank in its recent technical assessment has said that typical infrastructure projects in Pakistan cost twice as much and takes three times longer than planned. According to a benchmark report of the bank entitled "Infrastructure Implementation Capacity Assessment" public expenditure process in Pakistan is inefficient and public agencies taking-on too much and delivering too little, while the only deliverables are mostly political priorities. (The Post (Pak) 25x07)

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YOUR RESPONSES

Sethusamudram: Dangerous signals from media, govt, courts The issue at hand in the current controversy is whether the strip of submerged land connecting India with Sri Lanka is natural or created by human intervention, and not whether Lord Rama is a real or mythological character. It is piquant that those who now oppose the Sethusamudram Project on religious grounds have gained media attention and those who have from the outset been opposing it on grounds of human displacement, ecological reasons and even on economic viability grounds have been side-lined and forgotten. The displacement of thousands of fisher folk and their loss of livelihood and the undoubted environmental damage that will occur due to dredging the channel to create a canal do not need elaboration, except to say that if these costs are taken into consideration, the project may actually prove economically unviable. However, there is another economic argument that has been neglected – the canal will permit passage of only low-draft vessels (under 36,000 tons displacement) which constitute only about 30% of the shipping traffic that sails around Sri Lanka. Even these vessels may not be able to pass under their own power because of turbulence that their propellers will create that will cause the canal to fill up quicker with sand, and will therefore have to be towed by tugs. Further, while a vessel is passing in one direction, it may not be possible to pass another vessel in the opposite direction, and therefore negotiating the canal will take time. The actual traffic management and operation of the canal needs to be carefully studied before the claimed time-saving advantage of the project can be established. There is no evidence that a comprehensive economic feasibility study considering these factors, the cost of maintenance dredging and the user charges to the cargo shipping lines has been done.

Dr.S.G.Vombatkere, Major General (Retd), Corps of Engineers, Mysore

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