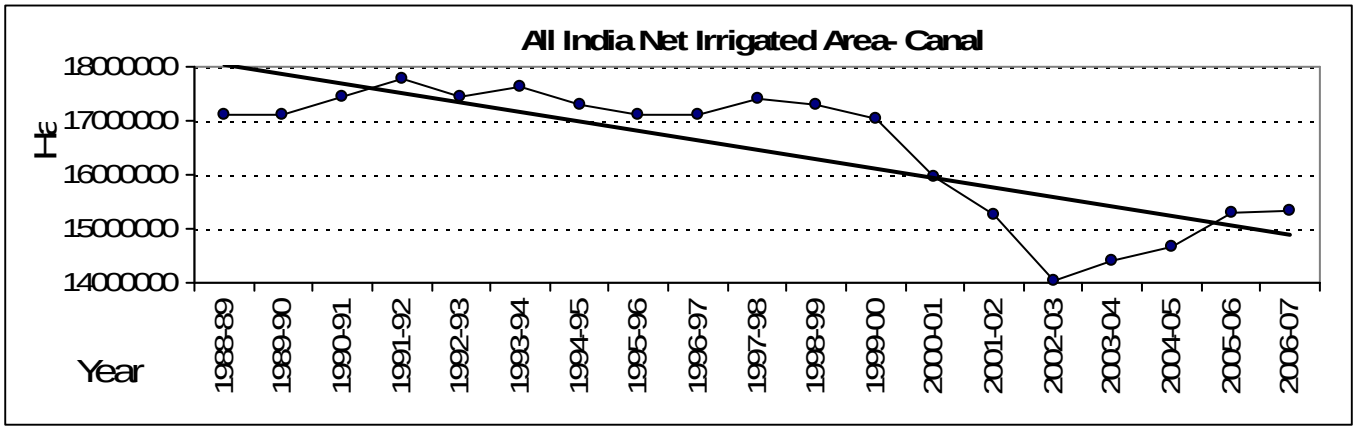
Shocking story of performance of large irrigation projects

No addition to Canal Irrigated areas for 15 years

In fifteen years from 1991-92 to 2006-07 (the latest year for which figures are available), there is been absolutely no addition to net irrigated areas by canals from Major and Medium Irrigation Projects as per official data from the Union Ministry of Agriculture, based on actual field data from states. From April 1991 to March 2007, the country has spent over Rs 130 000 crores on Major and Medium Irrigation Projects with the objective of increasing canal irrigated areas.



Two years back (see cover story in Sept-Oct '07 issue of *Dams, Rivers & People*: http://www.sandrp.in/drp/Sept_Oct2007.pdf) we showed that this was the story for twelve years ending in March '04. Since then we have received information (under the Right to Information Act, also available on the official website: http://www.dacnet.nic.in/eands/LUS_1999_2004.htm, the URL is correct) from the Union Ministry of Agriculture, which shows that the trend essentially remains the same, as can be seen from the graph above. The official data shows that this whole expenditure of over Rs 130 000 crore has not led to addition of a single ha in the net irrigated area by canals in the country for the whole of this fifteen year period. In fact the areas irrigated by such projects have reduced by a massive 2.44 million 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. But the MWR, Planning Commission and all the other official agencies have not realized the folly of continued investment of majority of our water resources investments for the big irrigation projects. About two thirds of all five year plan budget under water resources development continues to be used for M&M irrigation projects, including during the ongoing eleventh five year plan.

Net Irrigated Area by source, All India, 1990-2006 (Ha)

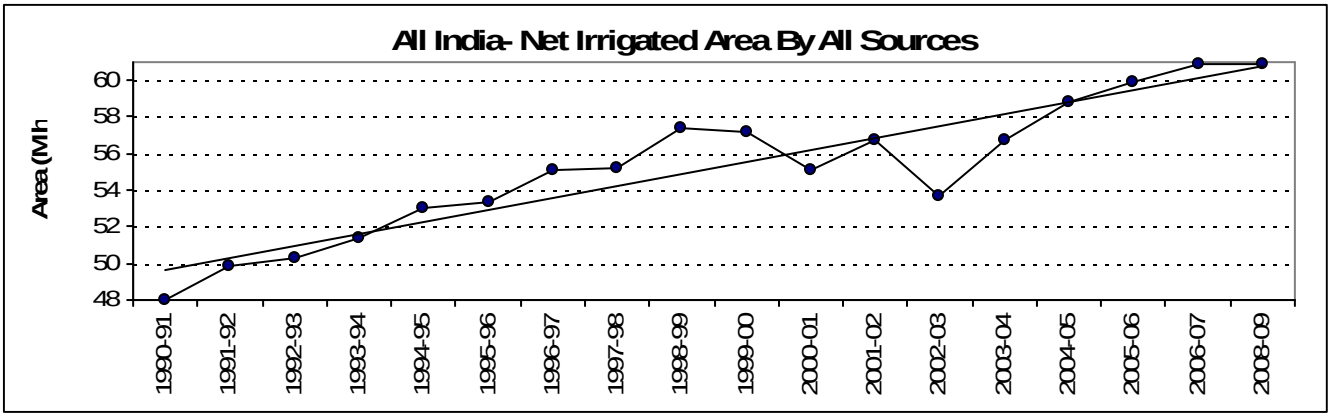
	Canals	Tube Wells	Other Wells	Total GW	Tanks	Other Sources	Total
1990-91	17453000	14257000	10437000	24694000	2944000	2932000	**48023000**
1991-92	17791000	15168000	10869000	26037000	2991000	3048000	**49867000**
1992-93	17457000	15814000	10569000	26383000	2854000	3599000	**50293000**
1993-94	17636000	16375000	10685000	27060000	2828000	3816000	**51340000**
1994-95	17280000	17190000	11722000	28912000	3276000	3533000	**53001000**
1995-96	17120000	17894000	11803000	29697000	3118000	3467000	**53402000**
1996-97	17109000	19338000	12457000	31795000	2821000	3388000	**55113000**
1997-98	17397000	19680000	12431000	32111000	2597000	3106000	**55211000**
1998-99	17311000	21394000	12606000	34000000	2795000	3329000	**57435000**
1999-00	17045000	22053000	12593000	34646000	2540000	2912000	**57143000**
2000-01	15965000	22569000	11260000	33829000	2455000	2885000	**55134000**
2001-02	15266000	23241000	11731000	34972000	2191000	4359000	**56788000**
2002-03 (p)	14042000	23479000	10660000	34139000	1804000	3667000	**53652000**
2003-04 (p)	14413000	24514000	11612000	36126000	1914000	4292000	**56745000**
2004-05 (p)	14649000	23063000	11834000	34897000	1725000	7546000	**58817000**
2005-06 (p)	15284000	23419000	11648000	35067000	2080000	7447000	**59878000**
2006-07 (p)	15351000	24056000	11853000	35909000	2044000	7554000	**60858000**

(p): Provisional

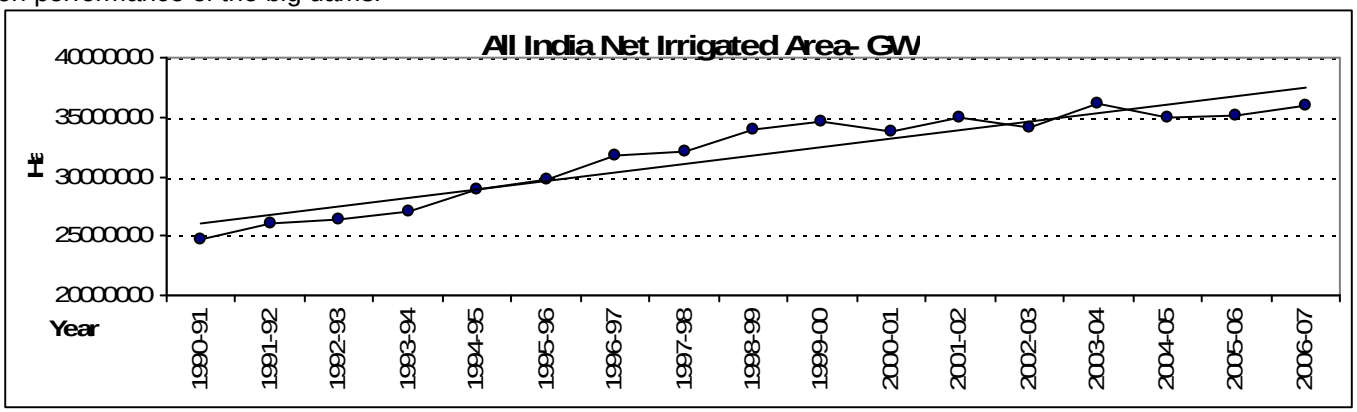
Source: Land Use Statistics at a Glance 1997-98 to 2006-07. Directorate of Economics & Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture, November 2008 Page: 36.

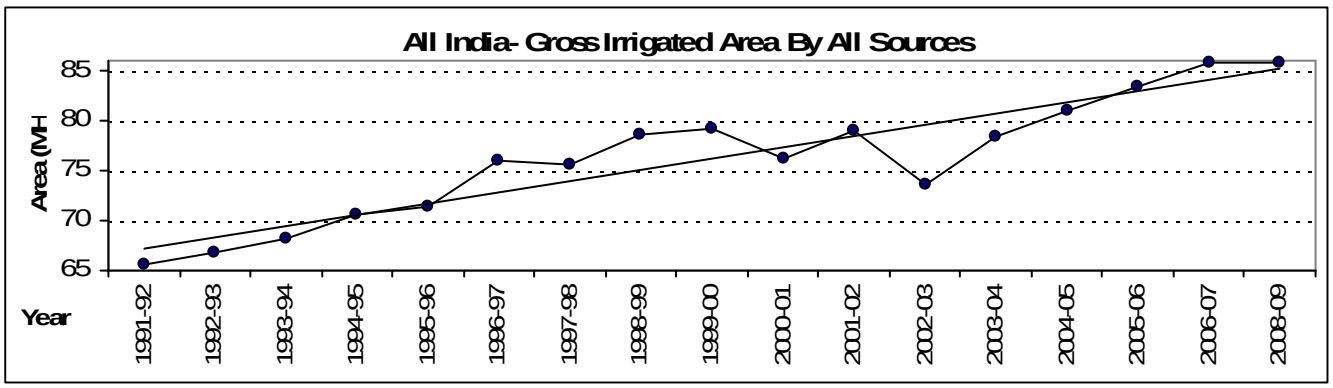
In this period, the MWR has been claiming (e.g. in the working group report on water resources for the 11th Plan and additional information thereafter) that the country has created additional irrigation potential of 10.5 million ha and utilisation of irrigation potential of additional 7.82 million ha, but the official data from the ground show how false these claims are. The MWR has been using such claims to push more allocations for investment in M&M irrigation projects. The MWR has proposed, for example, that in the 11th plan, an allocation of Rs 165900 crores should be done for the ongoing M & M Irrigation Projects. The available facts show that this is likely to 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 2006-07, 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 more or less consistently falling, as can be seen from the trend line in the graph above. The detailed figures of net irrigated area by source for the period 1990-91 to 2006-07 is given in the table above. 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 60.86 m ha by 2006-07, plotted on the graph below.

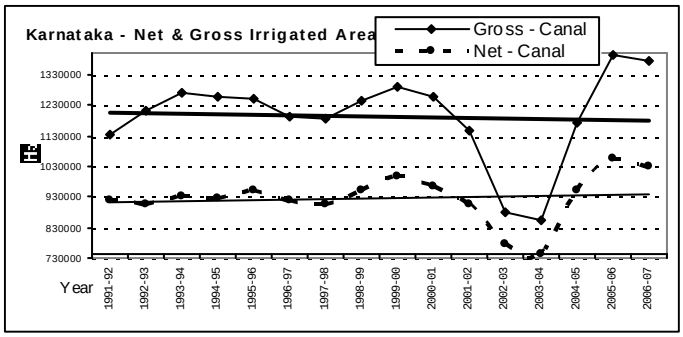


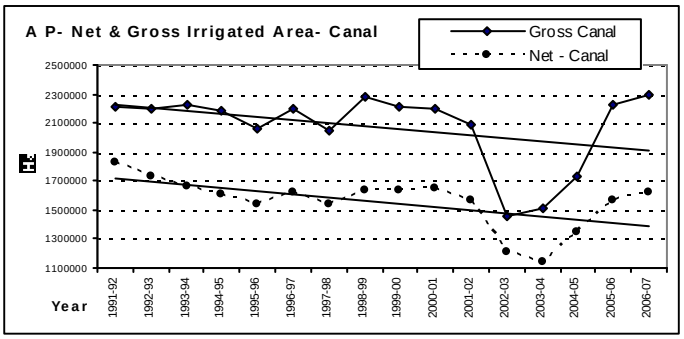
Similarly Gross Irrigated area (if two irrigated crops are taken in year on a give area, that area is counted twice in estimation of gross irrigated area, but once in estimation of net irrigated area) for total from all sources has been increasing during the period as seen in the graph above. This increase 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 35.91 m ha in 2006-07, 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.

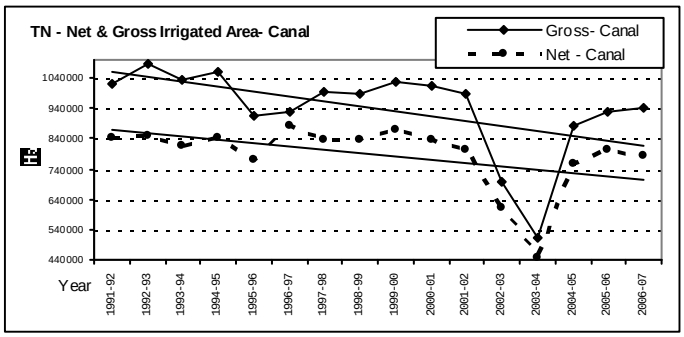


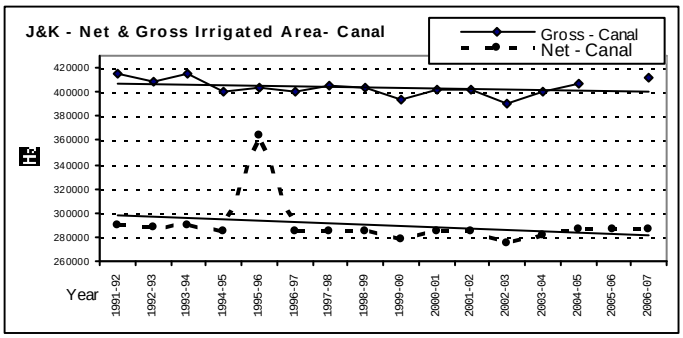


Figures of gross (& net) irrigated areas from canals for four major states (Andhra Pradesh, Tamil Nadu, Karnataka, Jammu and Kashmir) for the period under discussion for which necessary data is available also indicate this trend as can be seen from the graphs below. These graphs show that even gross 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.









In majority of the years during 1991-2007 (with the possible exception of 2002 and 2004), the rainfall has been normal or above normal. So it cannot be claimed that this trend is due to low rainfall.

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, increasing exploitation of groundwater. A reason cited by some: increased rainwater harvesting. 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 are almost universal in big irrigation projects, would mean that projects in any case there won't have sufficient water in the basin to provide the projected benefits. The climate change is likely to make this situation worse.

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. Lastly, this raises many accountability issues: Who are responsible for deciding on these wrong priorities and what consequences will follow? 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 rainwater harvesting, groundwater recharge and on rainfed areas. On groundwater front, we need to make preservation of existing groundwater recharge systems and augmentation of the same our top priority.

Even as the Planning Commission starts mid term review of 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 concluded.

Himanshu Thakkar & Swarup Bhattacharya, SANDRP