

IRRIGATION DEVELOPMENT PROFILE UNDER ACCELERATED IRRIGATION BENEFITS PROGRAMME

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ABSTRACT

India being primarily an agrarian society, irrigation plays an important role in poverty alleviation, particularly in rural areas. The economy of our country is considerably influenced by agriculture. In order to increase the agricultural production in the country, it is important to expand irrigation facility through sustainable development of both the surface and the groundwater resources. The development of irrigation received high priority by the Government in successive Plans after independence and many new irrigation projects were taken up to help achieve food security in the country. Till the Eighth Plan, an investment to the tune of Rs 52,600 crores was made under Plan. However, the completion of projects got delayed due to various reasons and the benefits derived from these projects were short of expectations. The lack of funds with the state governments resulting in thin spreading of available resources over many projects was being cited as the single most important reason for the inordinate delay in completion of irrigation projects. It was in this context that the Government launched the Accelerated Irrigation Benefits Programme (AIBP) in 1996-97 with an aim to accelerate creation of irrigation potential and realization of bulk benefits from completed irrigation projects in the country. Under AIBP, Central Government provides financial assistance to State Governments for expeditious completion of Major, Medium, ERM and Minor surface water irrigation projects. This effort on part of Union Government has helped in increasing the pace of creation of irrigation potential and completion of ongoing projects. However, the achievements have not been as per the expectations. This paper discusses the impact of AIBP on the irrigation sector in general in various states across the country and concludes with a need for a comprehensive review of the Programme.

"Opinion expressed in this paper is authors' personal aspirations it may not be considered as an official contribution."

1. Introduction

The history of irrigation development in India dates back at least a thousand years. But irrigation planning for the country as a whole, was initiated during the British rule. In the post-independence period, Government of India provided a massive thrust for irrigation development. During the First Plan started in 1951, irrigation development was accorded a high priority and many new irrigation projects were taken up to create food security in India. A number of major and medium irrigation projects were taken up. Successive plans ensured a sizeable investment for irrigation development which helped to create the 'green revolution'. With increased food production, food famine was relegated to history. However, with increasing population entailing higher demand for food, fibre and water, taking up more irrigation projects was one of paramount importance. Sustaining food security for future was itself a major endeavour. Till the Eighth Plan, investment under Plan to the tune of Rs 52600 crores was made on the major and medium projects in the irrigation sector in addition to Rs 34500 crore on minor irrigation and command area development schemes.

Despite a lot of investment, the completion of projects was getting delayed considerably due to various reasons and the benefits derived from these projects were short of expectations. This matter was continuously causing concern to the planners and the Government of India. Some common reasons cited for delay in timely completion of projects were paucity of fund, land acquisition problems, legal problems, labour problems, law and order problems, R&R problems, non-transfer of forest land, frequent changes in scope, poor co-ordination amongst implementing agencies, etc. However, the lack of funds with the state governments or thin spreading of available resources over many projects was being cited as the single most important reason for the inordinate delay in irrigation projects execution. Although higher outlays for irrigation continued with every plan period, percentage of total plan outlay reduced considerably. The relatively lower outlay in subsequent plan periods resulted in thin spreading of resources and time overrun in completion of projects. It was in this context that the Government launched the Accelerated Irrigation Benefits Programme (AIBP) in 1996-97 with the aim to accelerate creation of irrigation potential and realization of bulk benefits from completed irrigation projects in the country.

Under AIBP, Central Government provides financial assistance to State Governments for expeditious completion of Major, Medium, ERM and Minor surface water irrigation projects. Earlier this assistance was given in the form of interest-free (for a period of five years) loan. However, with effect from 2005-06, assistance is being given in the form of grant. Central Assistance is given at the rate of 90% of the cost of works involved in case of some special category of projects, while in the case of others, it is given at the rate of 25% of the cost. This effort on part of Union Government has helped in increasing the creation of irrigation potential and completion of ongoing projects.

However, the achievements have not been as per the expectations. As we are aware, several related issues in the implementation of this programme have been brought out by Comptroller & Auditor General in its report (Performance Audit of Accelerated Irrigation Benefits Programme (AIBP), Report of the Comptroller and Auditor General of India, Union Government (Civil), No. 4 of 2010-11). The Public Accounts Committee has also examined the matter and has made several recommendations to make this programme more effective and the Central Water Commission as well as Ministry of Water Resources are working towards addressing all such issues. The matter is also being looked into by the Working Group on Major & Medium Irrigation and Command Area Development for the XII Five Year Plan constituted by the Planning Commission to provide a critical review of the physical and financial performance of the sector during the XI Plan and suggest strategies, priorities and allocations for the XII Plan.

2. Evolution of AIBP

AIBP was launched during 1996-97 with an outlay of Rs.900 crore, subsequently revised to Rs.500 crore to accelerate the completion of selected ongoing irrigation projects in order that the envisaged benefits from locked investments in these projects are accrued. Initially, this programme had two components. The first component was designed to include projects costing more than Rs.1000 crores where substantial progress had been made. The other component was for major/medium projects in advanced stage of completion, i.e. expenditure to the extent of 75% or more had been incurred and which could be completed within four working seasons. Priority was to be given to inter-state projects costing more than Rs 100 crore where completion of certain components would benefit the co-basin states or work in one state would benefit the other state. The amount of loan was in the ratio of 1:1 (Centre:State) for each project. In 1997-98, Minor surface irrigation projects (both new and ongoing) of States of North-East and hilly states (HP, Sikkim & J&K) and drought-prone KBK districts of Orissa were also included. The Central Loan Assistance was extended to the States in the ratio of 2:1

(Centre:State) for projects except for Special category states, Northeast, HP, Sikkim, J&K, KBK districts of Orissa).

The July 2005 guidelines effective from 2004-05 included the grant component in the programme for all the projects. For both normal and fast track projects, the central share now consisted of 30% grant and 70% loan in the case of general category states and 90% grant and 10% loan in the case of special category states. The loan component of the central assistance was not to be released by Centre but was to be raised by States themselves from market borrowings. The drought prone areas, tribal areas and flood prone areas were also made equivalent to the special category states for the purpose of funding share. ERM projects were also included in the programme for reforming states, ~~states~~ which had enacted PIM legislation or for those projects where new potential was also envisaged with water saved and not merely restoration of lost potential. The inclusion of Minor irrigation projects was extended to drought prone and tribal areas in general category states as well with the target completion in two financial years. The target completion date for major and medium projects was now made next four financial years.

Since Dec 2006, the concept of categorizing projects as fast track has been abandoned. The loan component has been removed from the programme. Now, major/medium projects in the Special Category States and projects in undivided Koraput, Bolangir and Kalahandi districts of Orissa are eligible for 90% grant assistance. Major/medium projects including Extension Renovation & Modernization projects benefiting drought prone/tribal areas and flood prone areas were also eligible for 90% grant assistance. Other major/medium projects are eligible for 25% grant assistance under AIBP. The funding was restricted to the work component of the project cost, and the establishment component was to be borne entirely by the States, which was earlier allowed at the rate of 15 to 20% of the central share during a year and all major and medium projects included in the programme are expected to be completed in four financial years subsequent to the year of inclusion.

Surface MI schemes fulfilling criteria specified in the guidelines of the Special Category States are eligible for 90% grant assistance and surface MI schemes of the non special category states fulfilling eligibility criteria and benefiting drought prone/tribal areas are also eligible for 90% grant assistance. Maximum time allowed for completion of major/medium projects under AIBP is 4 years excluding the year of inclusion of the project under AIBP. The maximum time allowed for completion of surface MI schemes under AIBP is 2 years excluding the year of inclusion of the scheme under AIBP. The state governments are required to enter into an MOU with the Ministry of Water Resources for timely completion of the project specifying year wise targets of potential creation under AIBP. A new major/medium project may be included in AIBP only on completion of an ongoing project under AIBP on one to one basis. However, projects benefiting drought prone/tribal areas, projects in the states having irrigation development below national average and projects included in the Prime Minister's package for agrarian distressed districts of the Andhra Pradesh, Karnataka, Kerala and Maharashtra may be included in AIBP in relaxation to one to one criterion.

National Projects

The scheme of the National projects was approved by the Union Cabinet in its meeting held on 7th February 2008. Subsequently, with the concurrence of the Planning Commission and Ministry of Finance, guidelines for implementation of the scheme of the National projects were issued by the Ministry of Water Resources in February 2009. Under the scheme of National projects, 90% grant assistance of the eligible project cost is to be provided by the Government of India. The time allowed for completion of national projects is generally in accordance with the time period approved for completion of the project by the Technical Advisory Committee of Ministry of Water Resources while according techno-economic clearance to the project.

The Union Cabinet also approved a list of ~~the~~ 14 projects as National projects and a new project apart from 14 projects declared as national projects could be included in the list of the national projects only with the approval of the Union Cabinet. 14 projects declared as national projects were thus eligible for funding under the scheme, but only after all necessary approvals were obtained for the project including approval of the Technical Advisory Committee of the Ministry of Water Resources and investment clearance from the Planning Commission. However, 3 projects in the above stated list namely Gosikhurd Project of Maharashtra, ShahpurKandi project of Punjab and Teesta Barrage project of West Bengal were already approved projects and were being provided with central assistance under AIBP.

As per guidelines of the scheme of National Projects, the criteria for selection of National Project will be as under:

- (a) International projects where usage of water in India is required by a treaty or where planning and early completion of the project is necessary in the interest of the country.
- (b) Inter-State projects which are dragging on due to non-resolution of Inter-State issues relating to sharing of costs, rehabilitation, aspects of power production etc., including river interlinking projects.
- (c) Intra-State projects with additional potential of more than 2,00,000 hectare (ha) and with no dispute regarding sharing of water and where hydrology is established.

3. Development of Irrigation

Some of the noteworthy multipurpose and Major Projects taken up in the First Five Year Plan (1951-56) are BhakraNangal, Nagarjunasagar, Kosi, Chambal, Hirakud, Kakrapar and Tungabhadra. Simultaneously, minor irrigation schemes including ground water were also given emphasis under the Agricultural Sector, along with financial assistance from the Centre.

3.1 *Plan-wise proliferation of Major and Medium Irrigation Schemes*

The development of irrigation received high priority in successive plans and many new irrigation projects were taken up to create food security in India. A number of major and medium irrigation projects were taken up consuming a bulk of the investment under public sector. The overall outlay for irrigation increased quite substantially over different plan periods. During the periods of Second Five year Plan (1956-61), third Five year Plan (1961-66) and the Three Annual Plans (1966-69), irrigation programmes were being implemented with new starts. During the Fourth Five Year Plan (1969-74), the emphasis was shifted to the completion of ongoing projects, integrated use of surface and ground water, adoption of efficient management techniques and modernization of existing schemes, apart from continuation of new starts. During the fifth Plan (1974-78), Command Area Development Programme was launched as a Centrally Sponsored Scheme with the objective of reducing the lag between potential created and optimum utilization of available land and water. The programme was conceived as a means of co-ordinating all related farm activities under one umbrella. Initially, 60 Major and Medium projects were covered with a CCA of 15 Mha.

During the Annual Plans of 1978-80 and the Sixth five Year Plan (1980-85), 'new starts' continued and at the end of Seventh Plan, there were as many as 182 major and 312 medium ongoing projects requiring an estimated amount of Rs. 39,044 crore at the 1990-91 price level for their completion. 'New starts' were, therefore, restricted considerably and greater emphasis was laid on completion of projects, which were in the advance stages of completion (those with an expenditure of 75 percent or more). This was continued during 1990-91 & 1991-92 Annual Plans, as well as during VIII Plan (1992-97), IX Plan (1997-2002) and X Plan (2002-07).

3.2 *Overview of Irrigation development Profile*

The plan-wise potential created and utilized from Major & Medium as well as Minor irrigation(surface) projects is given in the Table 1.

Table 1: Plan-Wise Potential Creation and Utilization

Plan	Potential created			Potential Utilized		
	Major & Medium	Minor (SW)	Total	Major & Medium	Minor (SW)	Total
Upto 1951 (Pre-Plan)	9.70	6.40	16.10	9.70	6.40	16.10
I Plan (1951-56)	12.20	6.43	18.63	10.98	6.43	17.41
II Plan (1956-61)	14.33	6.45	20.78	13.05	6.45	19.50
III Plan (1961-66)	16.57	6.48	23.05	15.17	6.48	21.65
Annual Plans (1966-69)	18.10	6.50	24.60	16.75	6.50	23.25
IV Plan (1969-74)	20.70	7.00	27.70	18.39	7.00	25.39
V Plan (1974-78)	24.72	7.50	32.22	21.16	7.50	28.66
AP (1978-80)	26.61	8.00	34.61	22.64	8.00	30.64
VI Plan (1980-85)	27.70	9.70	37.40	23.57	9.01	32.58
VII Plan (1985-90)	29.92	10.90	40.82	25.47	9.97	35.44
AP (1990-92)	30.74	11.46	42.20	26.31	10.29	36.60
VIII Plan (1992-97)	32.95	12.51	45.46	28.44	11.07	39.51
IX Plan (1997-2002)	37.05	13.60	50.65	31.01	11.44	42.45
X Plan (2002-07)	42.35	14.31	56.66	33.74	12.00	45.74

Source: Report of the Working Group on Major & Medium Irrigation and Command Area Development for the XII Five Year Plan

In the pre-plan period prior to 1951, irrigation potential created in the country from major, medium and surface water minor projects was 16.10Mha. Out of this, the contribution of Major and Medium Irrigation Sector was 9.70 Mha while that of Minor irrigation sector (SW) was 6.4Mha.

3.2.1 Irrigation potential creation and utilization over plan periods

The created irrigation potential in respect of major and medium projects increased from 9.70 Mha in pre-plan period to 42.35 Mha at the end of X Plan. In the corresponding period the potential utilization has gone up from 9.70 Mha to 33.74 Mha. The pattern of irrigation potential creation (IPC) and irrigation potential utilization (IPU) from major, medium and surface water minor projects during the plan period is shown in Figure1:

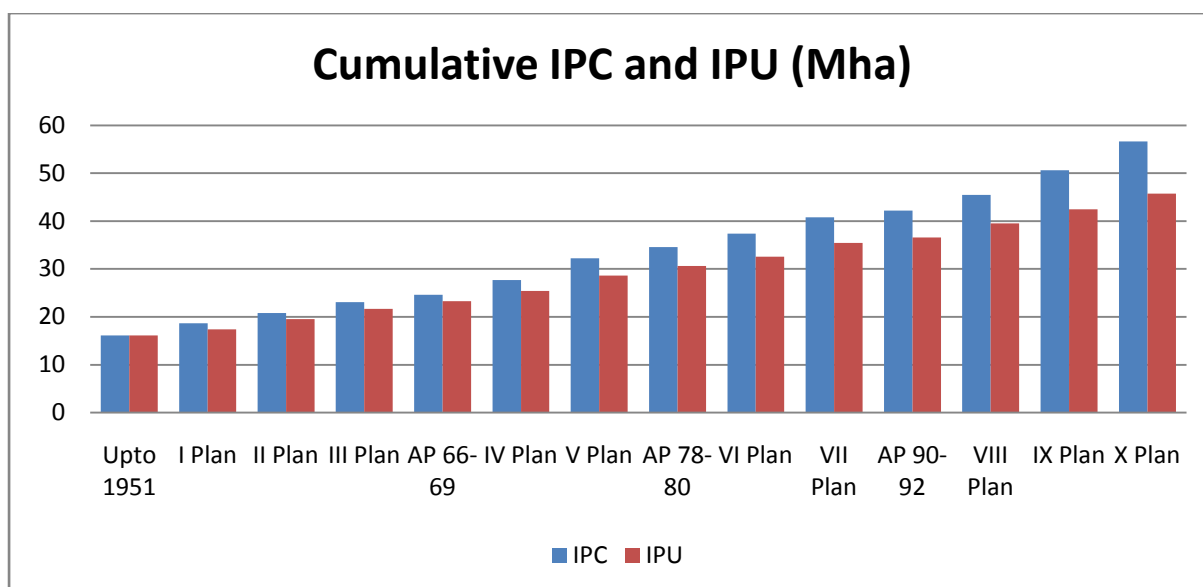


Figure 1: Plan-wise Growth of Irrigation Potential Creation & Utilisation

It is seen from the above that while there was no difference between the IPC and IPU at the beginning of the plan period, the gap has been consistently widening over different plan periods apparently pointing to the slow progress of command area development works in comparison to works related to irrigation potential creation upto the outlet points.

3.2.2 Annual rate of IP creation

The annual IP creation from major, medium and surface water minor irrigation schemes is given in Figure 2.

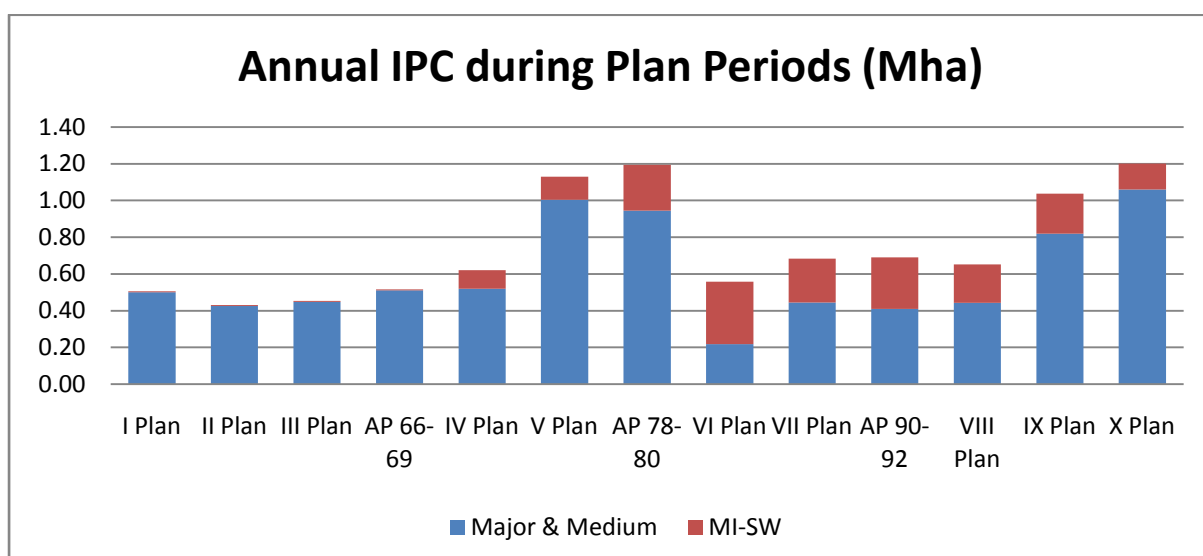


Figure 2: Annual rate of IP creation from major, medium and MI (SW) projects

The annual rate of IP creation reached a high around V Plan and the subsequent Annual Plan period of 1978-80. However, it started to decline till it started to pick up during VIII Plan after which it has again picked up considerably, culminating with the period when AIBP was launched. The contribution of surface water minor schemes reached a high after the end of V Plan. In the last three Plan periods, the contribution of IP creation from major and medium sector has increased quite substantially.

3.2.3 Irrigation development vis-a-vis UIP

The ultimate irrigation potential of the country estimated from all sources of water stands today at 139.90 Mha as per the latest assessment made by Ministry of Water Resources (Dec 1998). Out of this, 58.47 Mha has been estimated from major and medium schemes, and 17.38 Mha from surface water minor irrigation schemes with the balance provided by the ground water minor schemes.

The break-up of Ultimate Irrigation Potential available in the country from major & medium and minor projects state-wise is given in the Table 2.

Table 2: UIP, IPC & IPU upto X Plan

S. No.	States	Major & Medium			Minor		
		UIP [1]	IPC upto X Plan [2]	IPU upto X Plan [2]	UIP [1]	IPC upto X Plan [2]	IPU upto X Plan [2]
1	Andhra Pradesh	5.000	3.600	3.245	6.260	3.092	2.844
2	Arunachal Pradesh	0.000	0.001	0.001	0.168	0.114	0.087
3	Assam	0.970	0.303	0.211	1.900	0.632	0.509
4	Bihar	5.224	2.879	1.815	5.664	4.759	3.793
5	Chattisgarh	1.147	1.137	0.948	0.571	0.557	0.378
6	Goa	0.062	0.034	0.023	0.054	0.024	0.021
7	Gujarat	3.000	2.231	1.835	3.103	2.019	1.893
8	Haryana	3.000	2.194	1.893	1.512	1.638	1.584
9	Himachal Pradesh	0.050	0.015	0.008	0.303	0.171	0.145
10	Jharkhand	1.277	0.398	0.246	1.184	0.661	0.501
11	Jammu Kashmir	0.250	0.187	0.175	1.108	0.390	0.368
12	Karnataka	2.500	2.638	2.120	3.474	1.642	1.592
13	Kerala	1.000	0.669	0.591	1.679	0.687	0.629
14	Madhya Pradesh	4.853	1.932	1.173	11.361	2.341	2.217
15	Maharashtra	4.100	3.494	2.313	4.852	3.056	2.648
16	Manipur	0.135	0.107	0.081	0.469	0.093	0.073
17	Meghalaya	0.020	0.000	0.000	0.148	0.062	0.054
18	Mizoram	0.000	0.000	0.000	0.070	0.021	0.015
19	Nagaland	0.010	0.000	0.000	0.075	0.093	0.072
20	Orissa	3.600	1.974	1.879	5.203	1.649	1.442
21	Punjab	3.000	2.575	2.511	2.967	3.430	3.368
22	Rajasthan	2.750	2.862	2.526	2.378	2.468	2.374
23	Sikkim	0.020	0.000	0.000	0.050	0.034	0.026
24	TamilNadu	1.500	1.563	1.557	4.032	2.137	2.128
25	Tripura	0.100	0.014	0.010	0.181	0.135	0.116
26	Uttar Pradesh	12.154	8.782	6.809	17.481	23.604	18.871
27	Uttanchal	0.346	0.289	0.191	0.518	0.519	0.409
28	West Bengal	2.300	1.755	1.574	4.618	4.023	3.282
29	Union Territories	0.098	0.000	0.000	0.046	0.051	0.038
	Total	58.465	41.631	33.736	81.428	60.102	51.478

Source: [1] - Planning Commission, X Plan Document, [2] – P&P Directorate, CWC

We can plot the IPC and IPU for MMI upto X Plan against the UIP state-wise and get the picture as given in Figure 4. In figure 5, the same has been shown in case of MI projects.

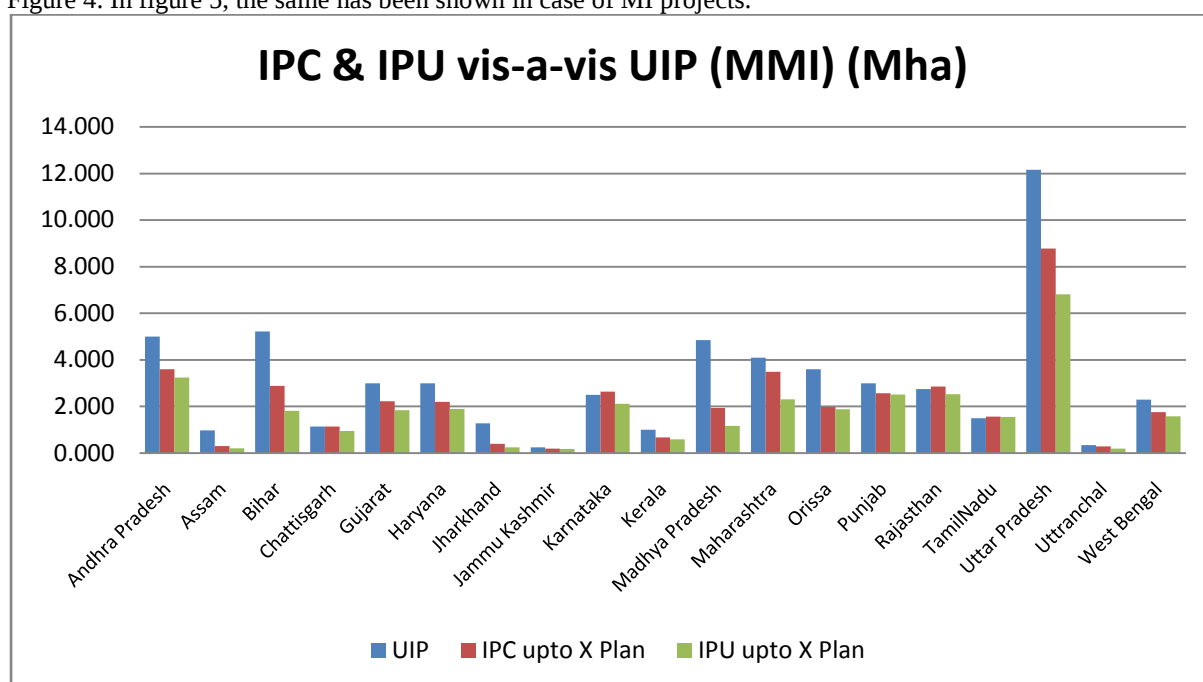


Figure 3: Statewise IPC and IPU under MMI upto X Plan vis-à-vis UIP

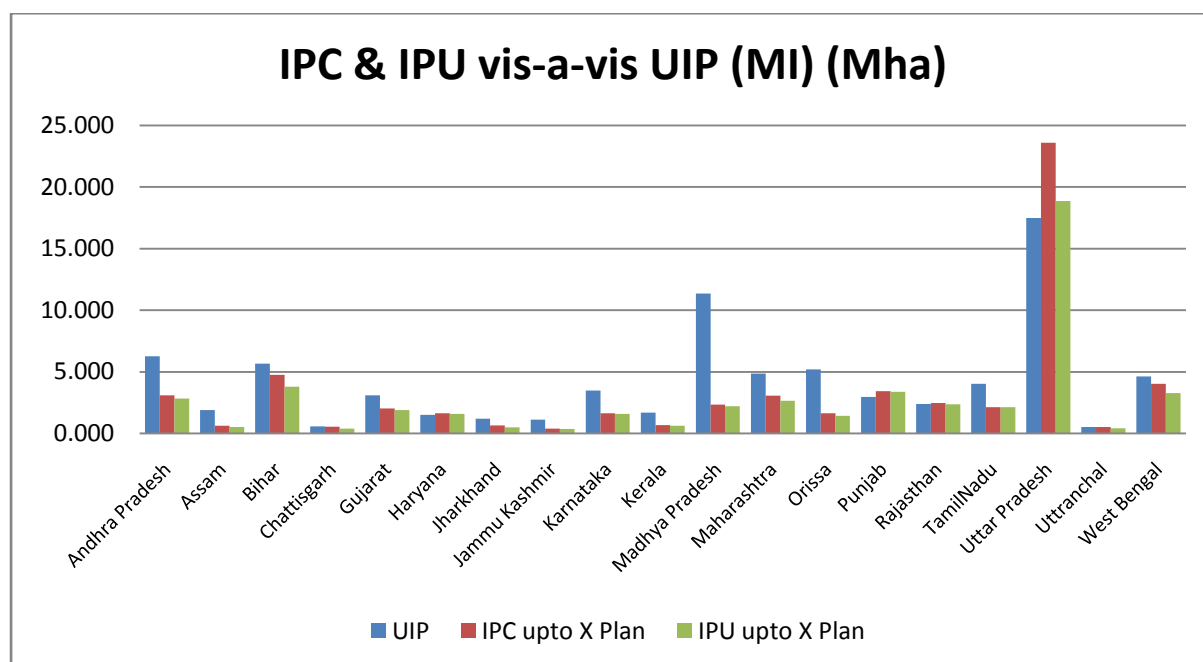


Figure 4: Statewise IPC and IPU under MI upto X Plan vis-à-vis UIP

From the graph we can see that there is still considerable irrigation potential left to be developed from major and medium projects in the States of Andhra Pradesh, Assam, Bihar, Jharkhand, Madhya Pradesh, Orissa and Uttar Pradesh. The burgeoning gap between potential creation and utilization indicates that much work is to be accomplished for stabilization of the potential. It is also clear that the States of Chhattisgarh, Jammu & Kashmir, Karnataka, Maharashtra, Punjab, Rajasthan, Tamilnadu, Uttaranchal and West Bengal have already reached their UIP levels from major and medium project segments.

Since Minor Irrigation projects belong to a different genre, with planning and development coming more often under the domain of the Panchayats and particularly with Groundwater irrigation which has a dominant private sector role, any meaningful assessment of its growth will not serve much of a purpose. Therefore further discussion about Minor Irrigation is not dealt with in this Paper.

3.3 Irrigation Development from AIBP projects

There are 287 major/ medium irrigation projects which have been included under AIBP till March 2011, out of which, 134 projects have been completed. Irrigation potential created from Major/medium projects up to March 2010 is about 63 lakh ha. The total central assistance released to these projects upto March 2010 is about Rs37309 crore.

3.3.1 State-wise IPC and CA over different plan periods

The following table 4 gives the amount of Central Assistance released state-wise to major and medium projects and irrigation potential created from them upto March 2010. We have given total figures plan-wise, treating 1996-97 as part of the IX Plan even though it was the last year of the VIII Plan when AIBP was launched.

Table 3: State-wise IPC and CA released under AIBP [1]

State	IPC (Th Ha)				CA released (Rs in crore)			
	IX Plan	X Plan	XI Plan	Total	IX Plan	X Plan	XI Plan	Total
Andhra Pradesh	121.5	232.1	190.2	543.9	630.6	1454.1	2912.0	4996.7
Assam	33.4	17.2	20.3	70.9	76.3	34.4	110.4	221.2
Bihar	73.8	372.5	26.3	472.6	339.7	145.8	211.5	697.0
Chhatisgarh	42.4	70.7	44.9	157.9	86.7	189.2	148.1	424.0
Goa	3.1	7.1	6.9	17.1	128.4	4.6	92.0	224.9
Gujarat	157.4	329.8	438.3	925.5	1971.7	2642.7	850.4	5464.8
Haryana	84.1	31.1	0.0	115.2	44.5	46.0	0.0	90.5
Himachal Pradesh	1.0	5.3	10.3	16.6	37.1	42.9	205.2	285.2
Jammu & Kashmir	3.9	11.8	12.2	27.9	27.5	97.9	230.3	355.7
Jharkhand	8.6	3.5	0.6	12.7	51.4	39.1	12.9	103.5
Karnataka	91.3	379.8	172.0	643.1	1066.9	1584.8	1567.6	4219.3
Kerala	10.4	22.4	2.7	35.5	52.4	112.1	4.7	169.3
Madhya Pradesh	23.8	121.5	210.8	356.0	716.6	1499.0	1486.0	3701.6
Maharashtra	95.5	165.1	225.6	486.2	305.9	1490.0	4526.5	6322.4
Manipur	0.0	5.0	11.9	16.9	70.8	250.9	384.5	706.1
Meghalaya	0.0	0.0	0.0	0.0	2.5	1.5	0.0	4.0
Orissa	59.5	72.8	58.8	191.2	529.3	632.3	2140.8	3302.4
Punjab	93.9	11.7	55.7	161.3	378.8	63.0	150.9	592.7
Rajasthan	188.0	252.1	314.0	754.1	466.2	1129.0	478.6	2073.8
Tamilnadu	0.0	0.0	0.0	0.0	20.0	0.0	0.0	20.0
Tripura	3.2	5.6	7.3	16.1	26.1	24.7	27.5	78.3
UP / Uttaranchal	585.4	402.4	219.0	1206.7	1154.6	1024.7	874.6	3053.9
West Bengal	62.6	17.9	17.7	98.2	125.4	51.5	24.6	201.5
	1742.9	2537.5	2045.4	6325.8	8309.3	12560.1	16439.2	37308.6

Source: [1] - Monitoring (Central) Directorate, CWC

We can see that the IPC from major and medium irrigation projects under AIBP increased from 1.74 Mha during IX Plan to 2.54 Mha during X Plan and to 2.05 Mha during first three years of the XI Plan. Converting into annual creation of IP, this rate works out to 0.29 Mha during IX Plan, 0.51 Mha during X Plan and 0.68 Mha during the first three years of XI Plan.

We can see the Plan-wise trend of cumulative IP created and the cumulative CA released in Figure 5.

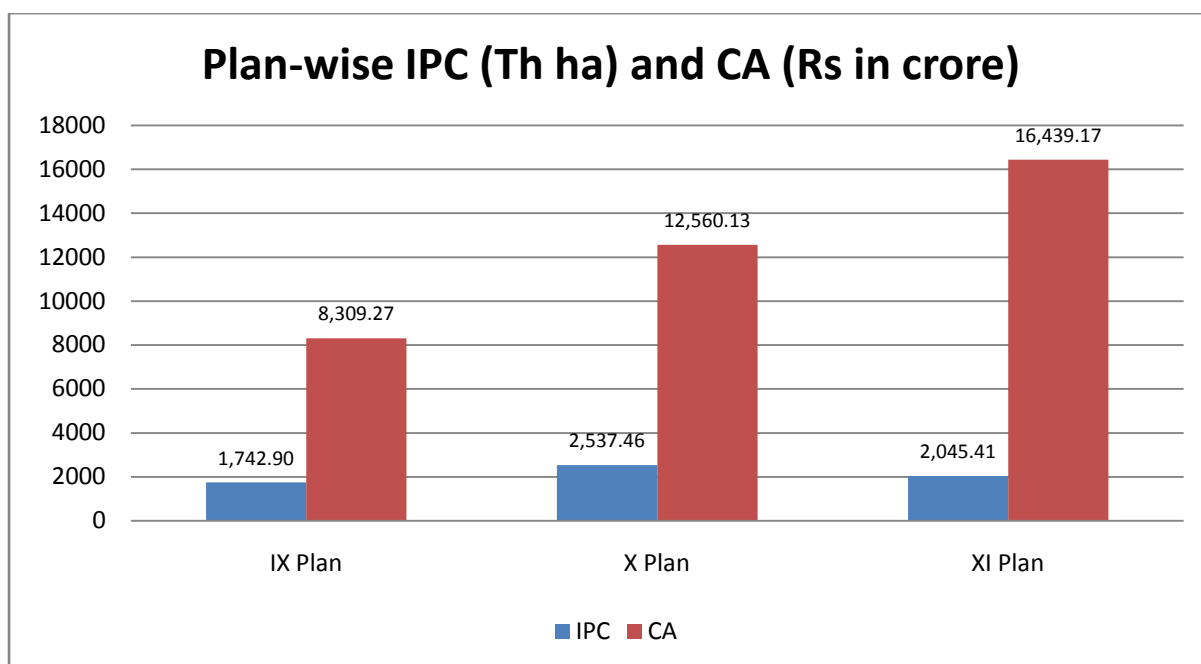


Figure 5: Plan-wise IPC and CA released in different plan periods

A simplistic assessment of irrigation potential created during each of the IX & X Plans indicate that a thousand hectare of potential has been created at a rate of Rs. 4.77 crores during IX Plan and Rs. 4.95 crores per thousand hectares during X Plan.

3.3.2 Trend of year-wise CA released, IPC and number of projects completed

The year-wise irrigation potential created and the central assistance released to major and medium projects under AIBP in different years is reproduced in Table 4.

Table 4: Year-wise IPC and CA released under AIBP [1]

Year	IPC	CA
1996-97	75.65	500.00
1997-98	202.32	952.19
1998-99	260.55	1119.18
1999-2000	226.35	1392.07
2000-01	533.88	1791.61
2001-02	444.14	2554.23
2002-03	466.68	3015.14
2003-04	415.85	3023.28
2004-05	489.36	2773.13
2005-06	689.95	1809.83
2006-07	475.62	1938.75
2007-08	1011.66	4504.67
2008-09	567.09	5131.81
2009-10	466.66	6802.68
Total	6325.77	37308.56

Source: [1] - Monitoring (Central) Directorate, CWC

We can see the trend of year-wise trend of creation of irrigation potential and CA released under AIBP in Figure 6. In Figure 7, we have shown the cumulative irrigation potential creation year-wise under AIBP.

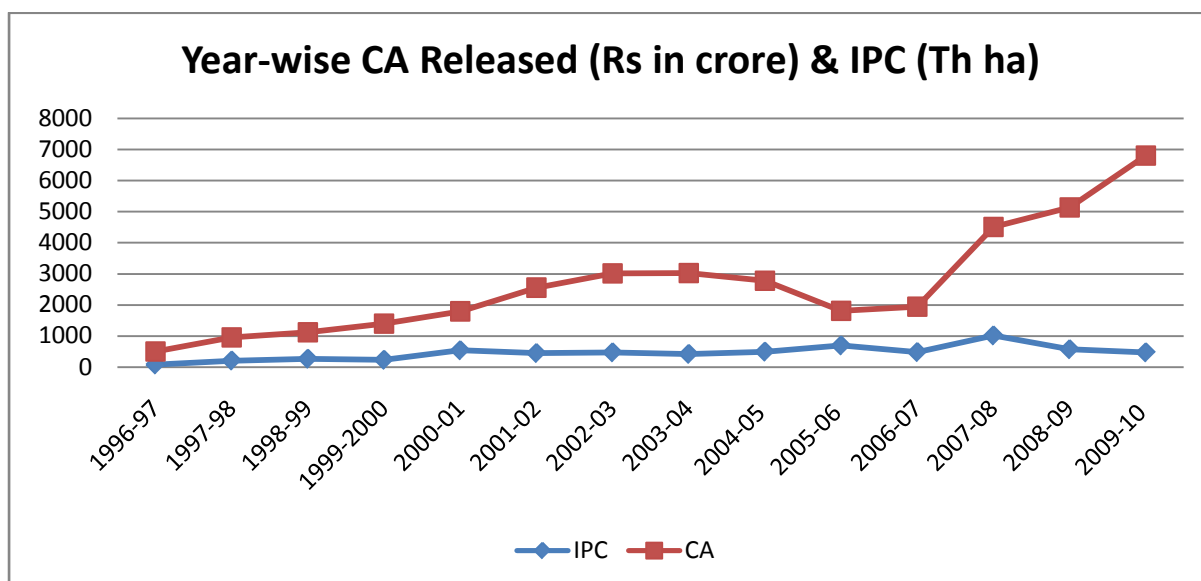


Figure 6: Year-wise trend of CA released and IPC under AIBP

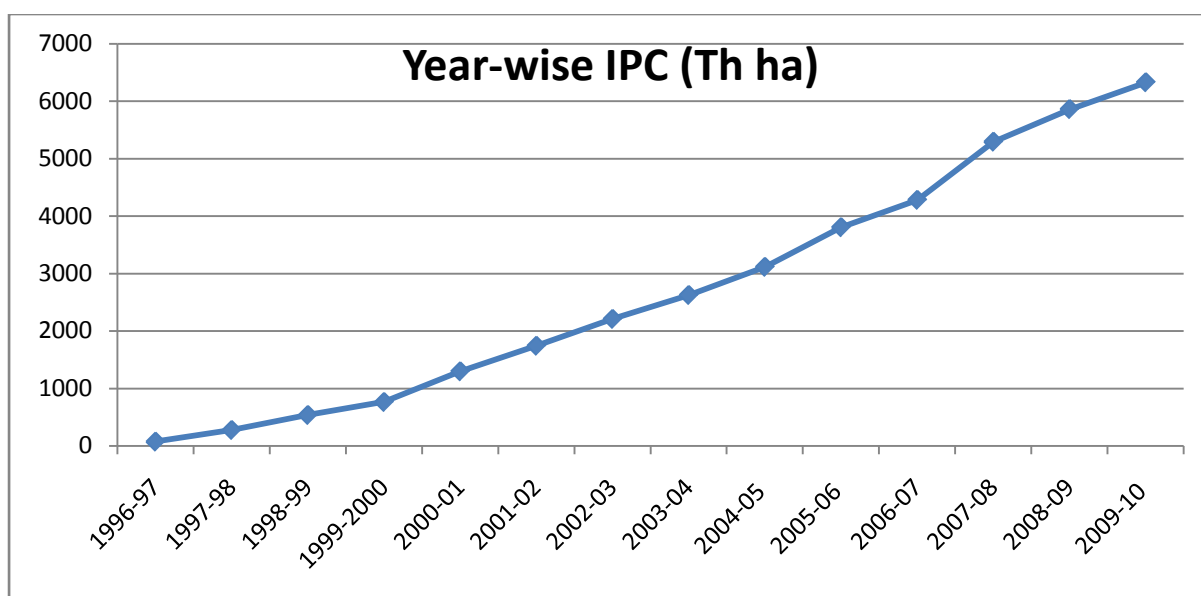


Figure 7: Year-wise trend of cumulative IPC under AIBP

There has been generally a consistently increasing rate of IP creation from AIBP projects in different years. A slightly decreasing rate from 2007-08 onwards may be explained due to some decrease in the pace of funding from 2004-05 onwards. The pace of funding has again picked up from the year 2007-08 onwards which should translate into higher pace of IP creation in the last two years of XI Plan.

3.3.3 Trend of annual rate of IP creation over plan periods state-wise

The following table gives the State-wise trend of irrigation potential creation (th ha) from major and medium projects under different plan periods since launch of AIBP. The data covers period upto March 2010. The annual rates have been calculated for 3 years during XI Plan for which data is available with CWC. Further, the potential created during 1996-97 has been included in the calculation of annual IPC for the IX Plan.

Table 5: Annual rate of IP creation in different plan periods

S. No.	State	IX Plan IPC Annual	X Plan IPC Annual	XI Plan IPC Annual
1	Andhra Pradesh	20.256	46.426	63.412
2	Assam	5.568	3.443	6.761
3	Bihar	12.299	74.506	8.763
4	Chhattisgarh	7.065	14.134	14.962
5	Goa	0.510	1.420	2.306
6	Gujarat	26.240	65.961	146.088
7	Haryana	14.022	6.218	0.000
8	Himachal Pradesh	0.164	1.063	3.449
9	J&K	0.655	2.358	4.064
10	Jharkhand	1.433	0.704	0.202
11	Karnataka	15.214	75.969	57.336
12	Kerala	1.729	4.474	0.901
13	Madhya Pradesh	3.965	24.294	70.252
14	Maharashtra	15.924	33.020	75.202
15	Manipur	0.000	1.000	3.954
16	Meghalaya	0.000	0.000	0.000
17	Orissa	9.923	14.568	19.609
18	Punjab	15.652	2.349	18.554
19	Rajasthan	31.334	50.414	104.667
20	Tamilnadu	0.000	0.000	0.000
21	Tripura	0.540	1.115	2.421
22	U.P./Uttaranchal	97.563	80.479	72.990
23	West Bengal	10.430	3.578	5.910
		290.483	507.492	681.802

There are no major or medium projects from Arunachal Pradesh, Mizoram, Nagaland, Sikkim and any of the UTs under AIBP. The annual rates of IP creation in different States have been plotted in Figure 8 to Figure 12. For the purpose of plotting these figures, states having comparable rates of IP creation in different plan periods have been grouped together.

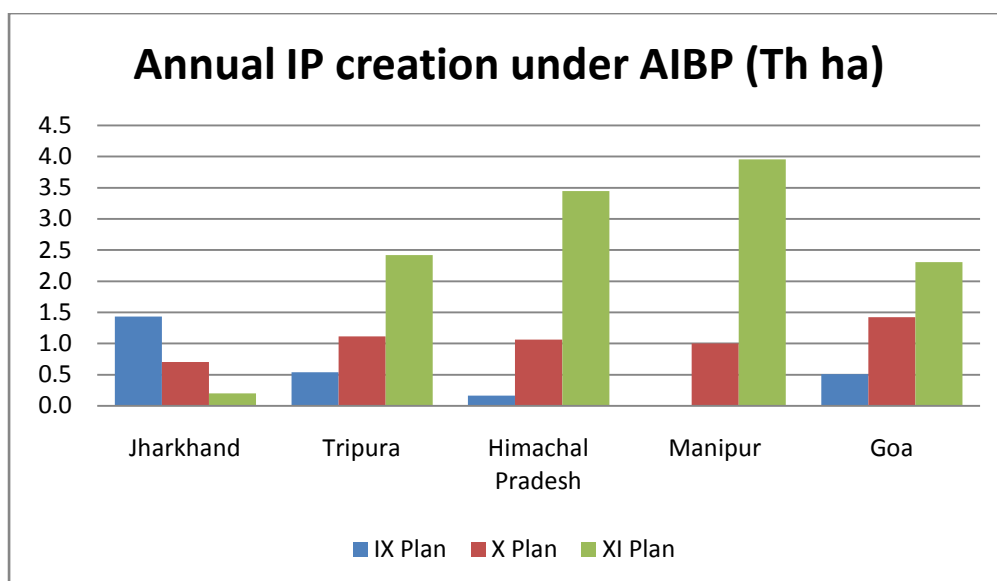


Figure 8: Annual IP creation in different states under AIBP

The figure shows a consistently increasing trend from IX to XI Plan in case of all states except Jharkhand. This may be explained by the fact that the CA released to Jharkhand has gone down from Rs 51.4 crore in the IX Plan to Rs 39.1 crore in the X Plan and then to only Rs 12.9 crore in the XI Plan.

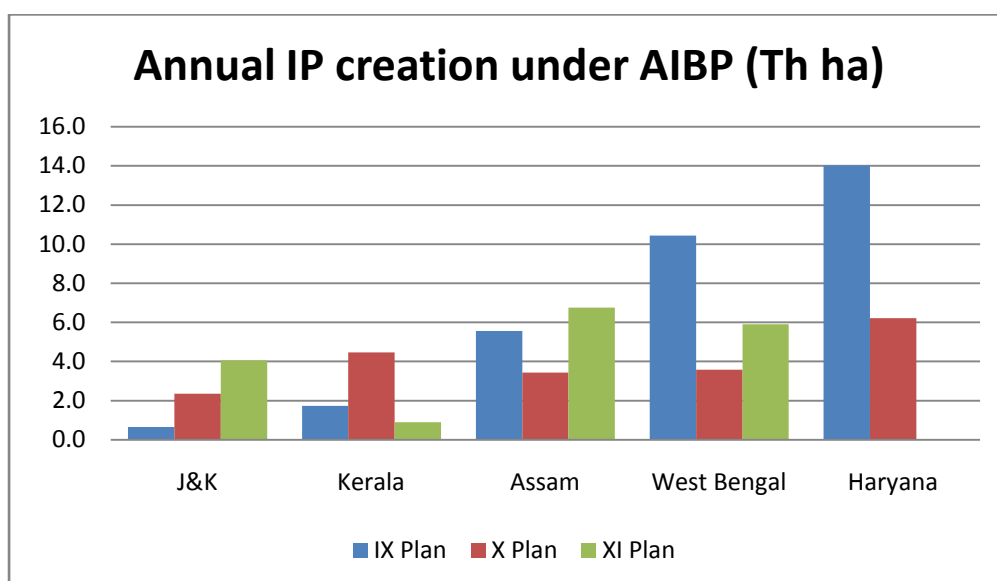


Figure 9: Annual IP creation in different states under AIBP

The figure shows a mixed trend except for J&K and Haryana. J&K has shown a consistently increasing trend of annual IP creation, while Haryana has shown a decreasing trend, which may be explained by one of its projects, J L N Lift irrigation being deferred by the State Government and most of the potential generated from its WRCP project in the initial years of funding. For Kerala, the funding decreased drastically from Rs 112.1 crore to Rs 4.7 crore in the XI Plan, while for Assam, the funding reduced from Rs 76.3 crore in the IX Plan to Rs 34.4 crore and then increased to Rs 110.4 crore. Similarly, for West Bengal, the funding got reduced from Rs 125.4 crore to Rs 51.5 crore and then to Rs 24.6 crore in the corresponding periods.

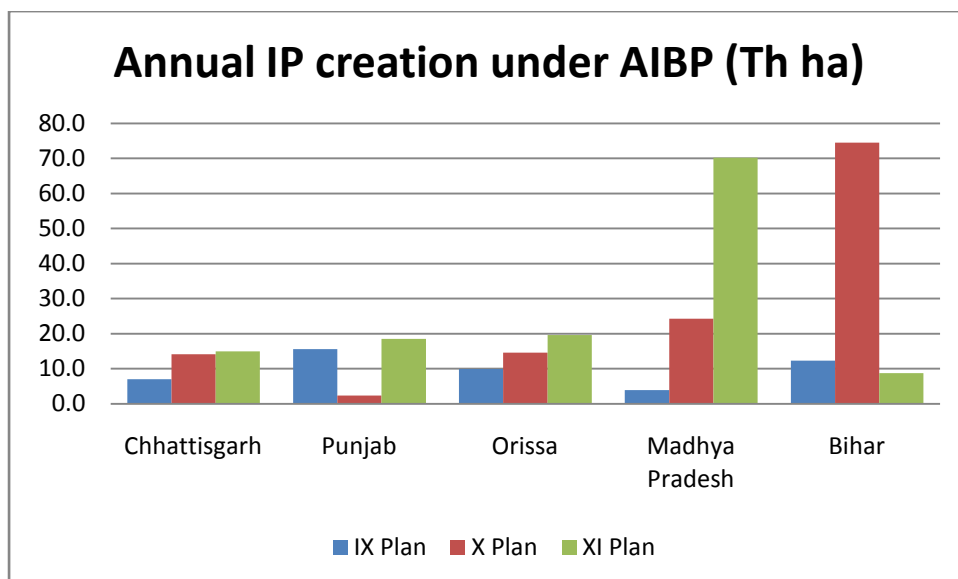


Figure 10: Annual IP creation in different states under AIBP

Here we see a consistently increasing trend except in case of Punjab and Bihar. Punjab the maximum funding in the initial years since launch of AIBP, its funding got drastically reduced during X Plan. Bihar received substantial funding during IX Plan amounting to Rs 339.7 crore, bulk of which came in the year 1999-2000 and 2000-01. The funding remained low throughout the X Plan except in the year 2003-04. The funding has again picked up from 2007-08 onwards, which should translate into enhanced rate to annual IP creation by the end of the XI Plan. Madhya Pradesh also witnessed substantial increase in IP creation rate from IX Plan to XI Plan as the central release to the state picked up from about Rs 716 crore in the IX Plan to Rs 1499 crore in the X Plan and then Rs 1390 crore upto first three years of the XI Plan.

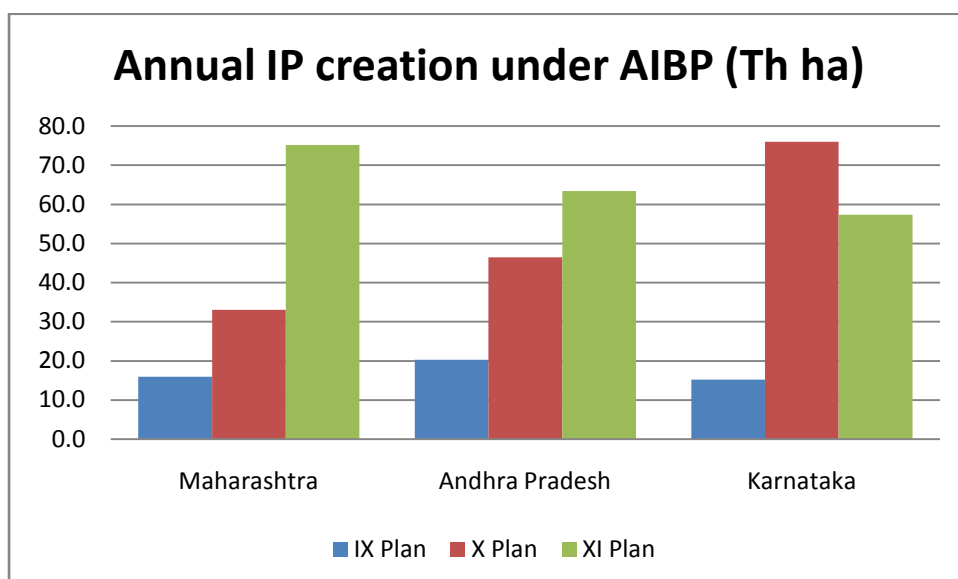


Figure 11: Annual IP creation in different states under AIBP

The data in the above figure shown a consistently increasing trend except in case of Karnataka, whose funding has not gone down from X to XI Plan, but a major part of the funding during XI Plan, more than 50% has come in the year 2009-10, the last considered in this analysis.

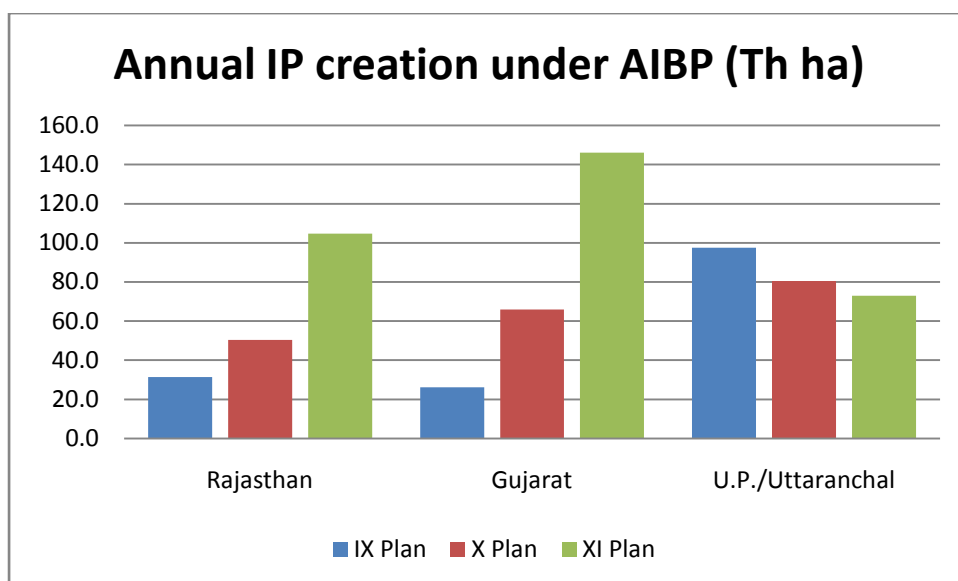


Figure 12: Annual IP creation in different states under AIBP

The trends are favourable in respect of all states except UP/Uttaranchal. A part of the reason lies in the fact that the total funding to the state has gone down by about 10% from IX to X Plan and also from IX to X Plan. Another reason for this is that while funding remained almost at a constant level during IX Plan, the funding during X Plan went down considerably from the initial years onwards. The amount of funding has picked up again during XI Plan and the picture should look somewhat more on the positive side by the end of XI Plan. The problem of no creation of irrigation potential in one of the projects, Bansagar canal which has received close to 20% of the funding going to the entire state is another reason why the rate of annual IP creation has been showing a decreasing trend.

In figure 13, the rate of average annual rate of creation of irrigation potential from AIBP has been shown in the country as a whole, which indicates that the annual IP creation rate in the country has gone up from 290 th ha during IX Plan to 507 th ha during X Plan and further to 682 th ha during the first three years of XI Plan.

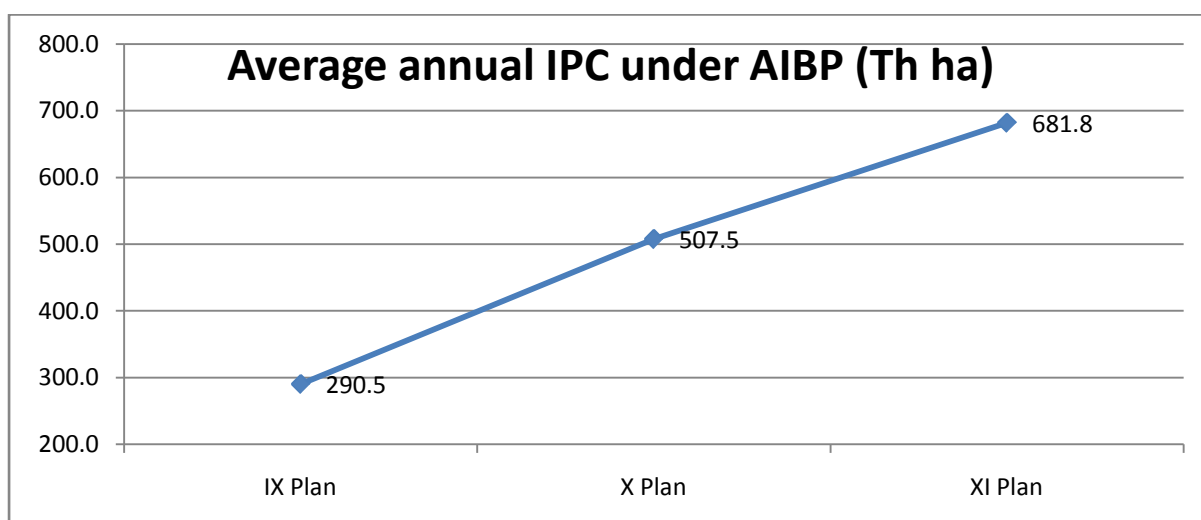


Figure 13: Average annual IP creation rate in the country

3.3.4 Irrigation development across states upto VIII, IX, X and XI Plan

The Table 6 gives the State-wise details of total irrigation potential created from major and medium projects upto VIII Plan (roughly coinciding with launch of AIBP in 1996-97), IX Plan, X Plan and XI Plan (upto March 2010) along with the potential created from major and medium projects under AIBP.

Table 6: Contribution of AIBP in total IPC (Mha) in different Plans state-wise

State	UIP	Upto VIII Plan	Upto IX Plan		Upto X Plan		Upto XI Plan (3/2010)		Upto XI Plan extrapolated	
		Total IPC [1]	Total IPC [2]	IPC AIBP	Total IPC [3]	IPC AIBP	Total IPC [3]	IPC AIBP	Total IPC	IPC AIBP
Andhra Pradesh	5.000	3.045	3.303	0.122	3.600	0.354	3.983	0.544	4.238	0.671
Assam	0.970	0.197	0.244	0.033	0.303	0.051	0.378	0.071	0.428	0.071
Bihar	5.224	2.803	2.680	0.074	2.879	0.446	2.970	0.473	3.031	0.473
Chhattisgarh	1.147	0.000	0.923	0.042	1.137	0.113	1.201	0.158	1.244	0.158
Goa	0.062	0.013	0.021	0.003	0.034	0.010	0.048	0.017	0.057	0.017
Gujarat	3.000	1.350	1.430	0.157	2.231	0.487	3.208	0.926	3.859	0.926
Haryana	3.000	2.079	2.100	0.084	2.194	0.115	2.209	0.115	2.219	0.115
Himachal Pradesh	0.050	0.011	0.013	0.001	0.015	0.006	0.020	0.017	0.023	0.017
Jammu & Kashmir	1.277	0.174	0.180	0.004	0.398	0.016	0.217	0.028	0.096	0.028
Jharkhand	0.250	0.000	0.354	0.009	0.187	0.012	0.464	0.013	0.649	0.013
Karnataka	2.500	1.666	2.121	0.091	2.638	0.471	2.837	0.643	2.970	0.643
Kerala	1.000	0.513	0.610	0.010	0.669	0.033	0.693	0.035	0.709	0.035
Madhya Pradesh	4.853	2.318	1.387	0.024	1.932	0.145	2.285	0.356	2.520	0.356
Maharashtra	4.100	2.313	3.239	0.096	3.494	0.261	3.631	0.486	3.722	0.486
Manipur	0.135	0.063	0.156	0.000	0.107	0.005	0.141	0.017	0.164	0.017
Meghalaya	0.020	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Orissa	3.600	1.558	1.827	0.060	1.974	0.132	2.061	0.191	2.119	0.191
Punjab	3.000	2.513	2.542	0.094	2.575	0.106	2.678	0.161	2.747	0.161
Rajasthan	2.750	2.274	2.482	0.188	2.862	0.440	3.110	0.754	3.275	0.754
Tamilnadu	1.500	1.546	1.549	0.000	1.563	0.000	1.574	0.000	1.581	0.000
Tripura	0.100	0.002	0.005	0.003	0.014	0.009	0.024	0.016	0.031	0.016
UP/Uttarakhand	12.500	7.059	8.190	0.585	9.071	0.988	9.509	1.207	9.801	1.207
West Bengal	2.300	1.444	1.683	0.063	1.755	0.080	1.760	0.098	1.763	0.098
Total	58.338	32.941	37.069	1.743	41.632	4.280	45.001	6.326	47.247	6.453

Source: [1] - Planning Commission, IX Plan Document, [2] - Planning Commission, X Plan Document, [3] – Courtesy P&P Dte, CWC.

During VIII Plan period irrigation potential of 2.21Mha was created under major and medium sector at an annual rate of 0.44 Mha per annum (Table 1). During IX Plan period this increased to 4.12 Mha subsequent to introduction of AIBP as a support mechanism out of which about 1.74 Mha (nearly 40%) was through AIBP. During X Plan period this increased to 5.30 Mha out of which 2.54 Mha (nearly 48%) was through AIBP.

4.Critical review of irrigation development

We can plot the state-wise total IP creation upto different plan periods starting with the end of VIII Plan (roughly coinciding with the launch of AIBP) as well as the IP creation from projects funded under AIBP vis-a-vis total estimated UIP in the state to give an idea of the contribution of AIBP in the overall irrigation development in different states, and also to arrive at some estimate of the time by which a particular state is likely to achieve its UIP. The IPC data is available during XI Plan only upto March 2010, i.e. for three years during the XI Plan. The total IPC and the IPC from AIBP has been extrapolated for the remaining two years of the XI Plan to give an estimate of the IPC figures for the whole XI Plan. Based on the IPC figures upto VIII Plan, IX Plan, X Plan and the estimated values for XI Plan, the likely potential creation, both total and from AIBP projects in each state has been computed. The state-wise results so obtained have been plotted in the Figure 14A-W.

Figure 14A: Andhra Pradesh

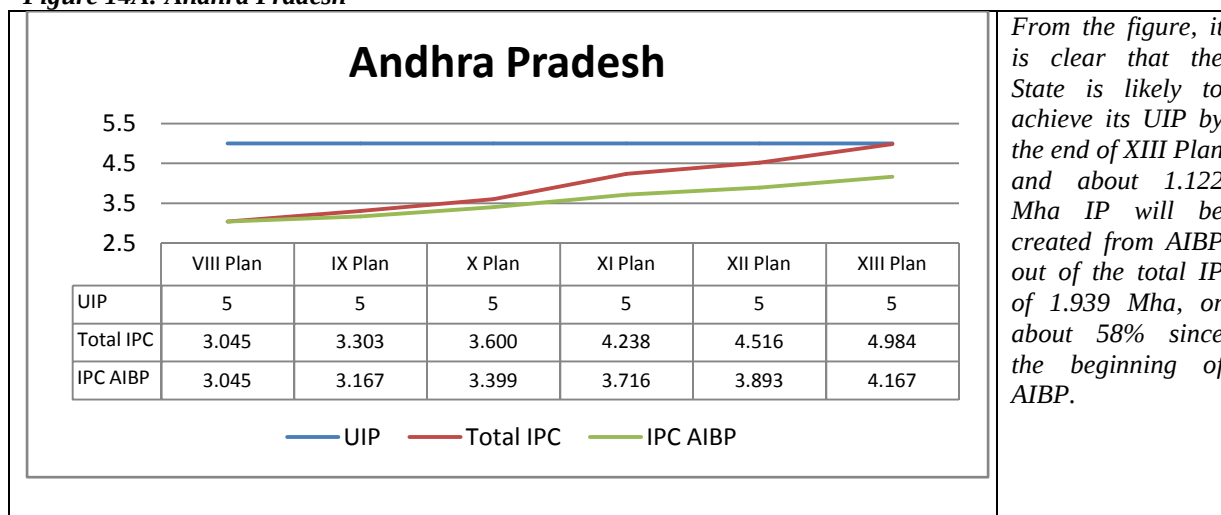


Figure 14B: Assam

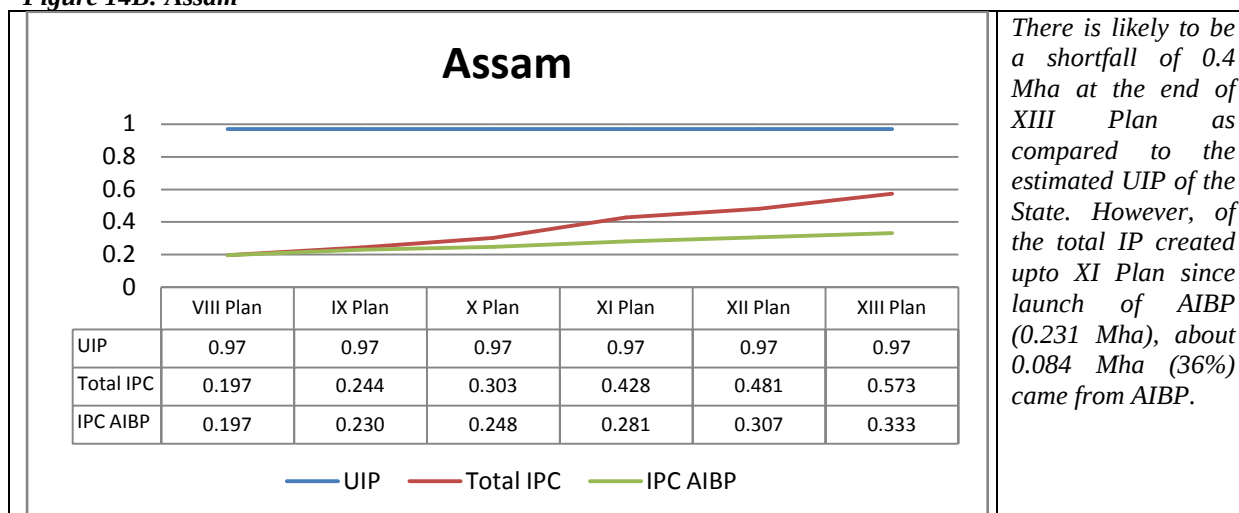


Figure 14C: Bihar

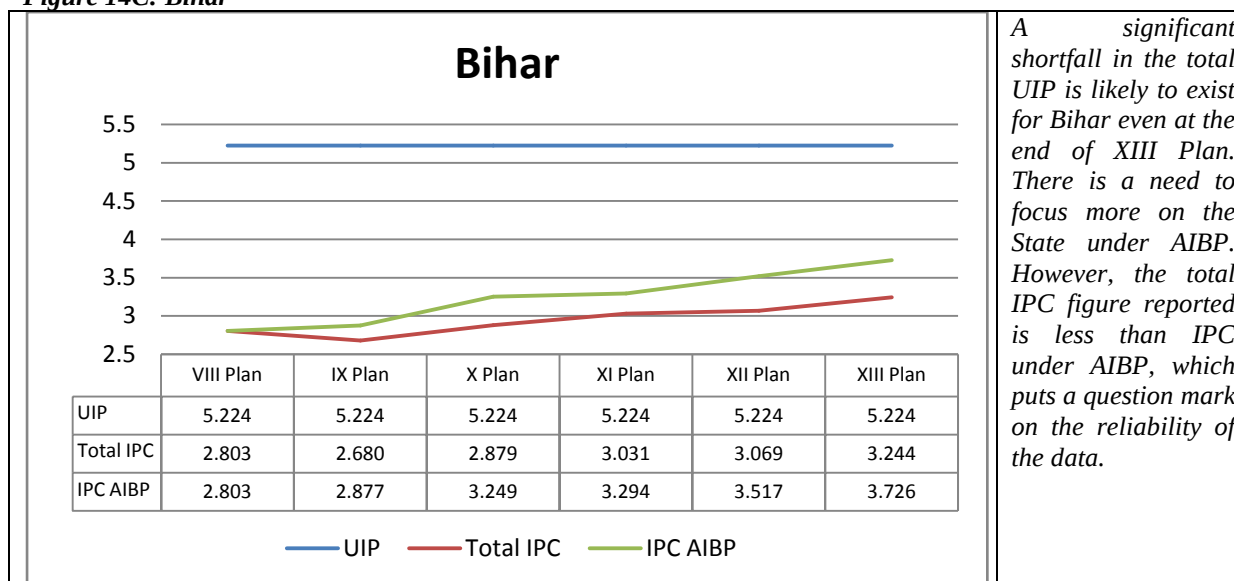


Figure 14D: Chhattisgarh

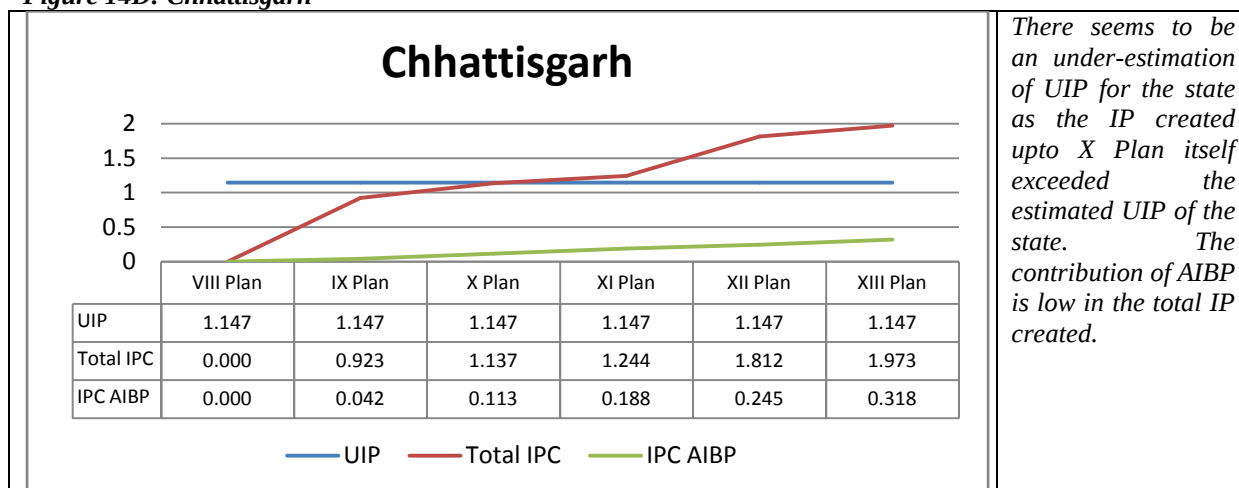


Figure 14E: Goa

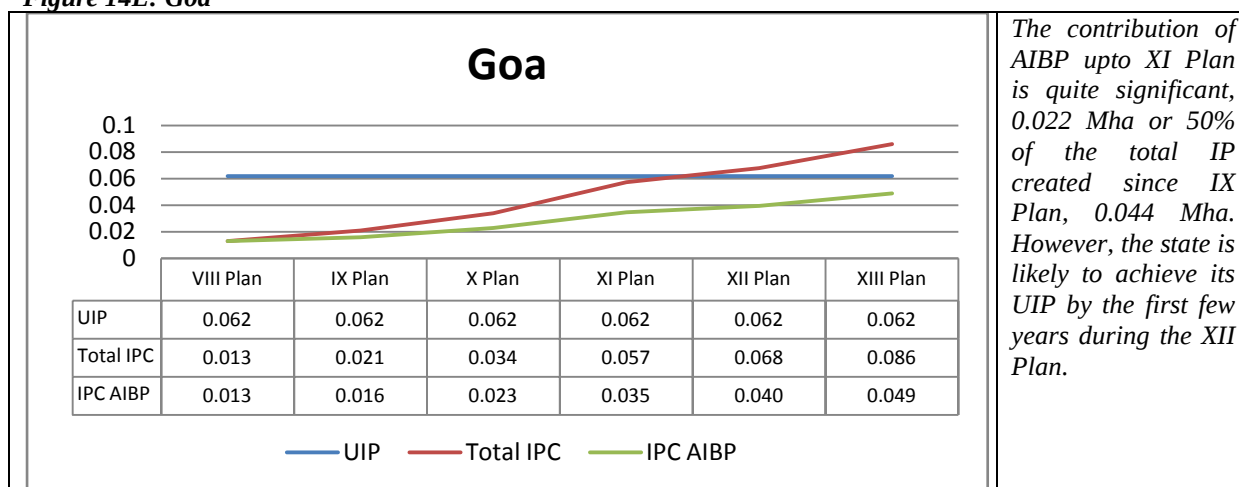


Figure 14F: Gujarat

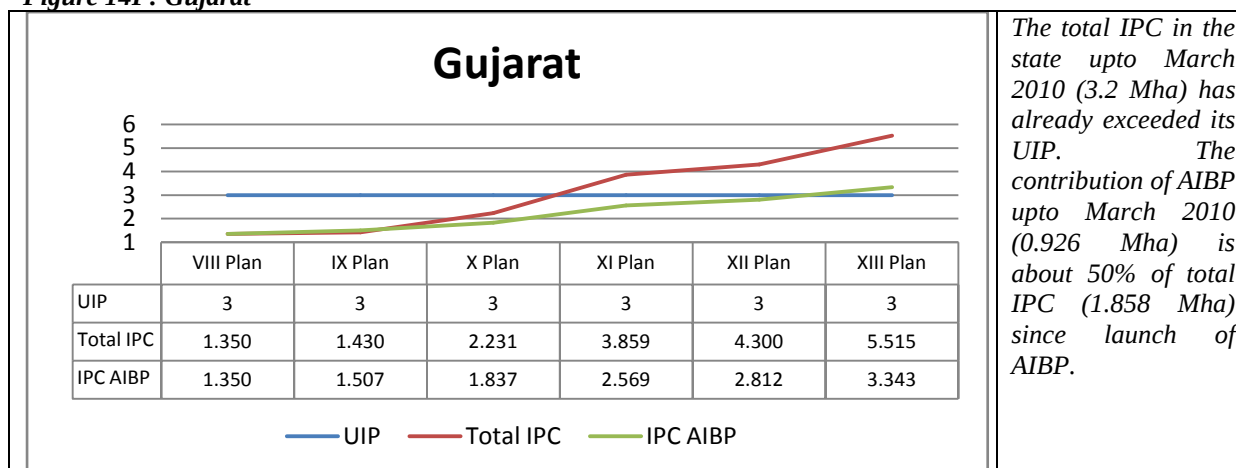


Figure 14G: Haryana

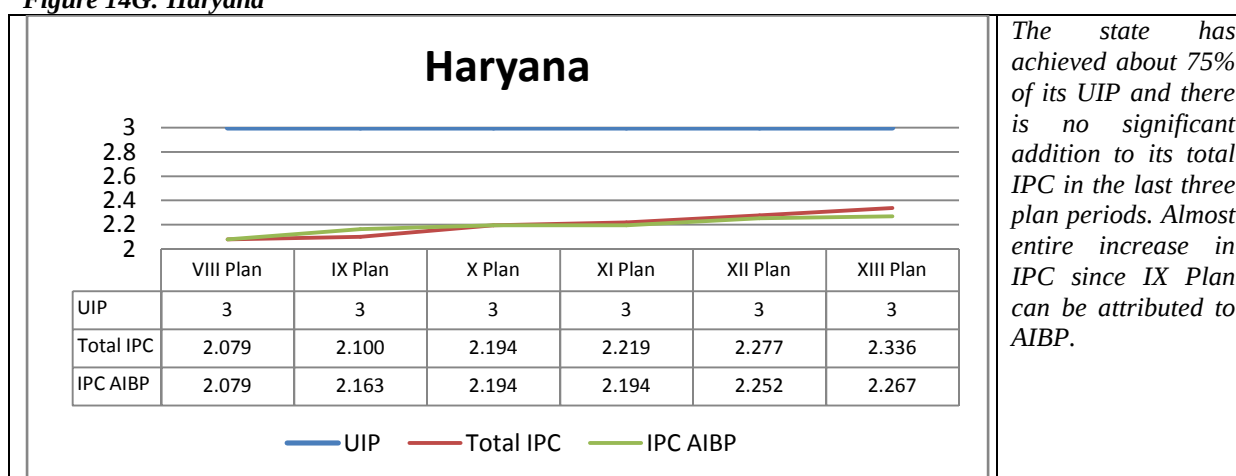


Figure 14H: Himachal Pradesh

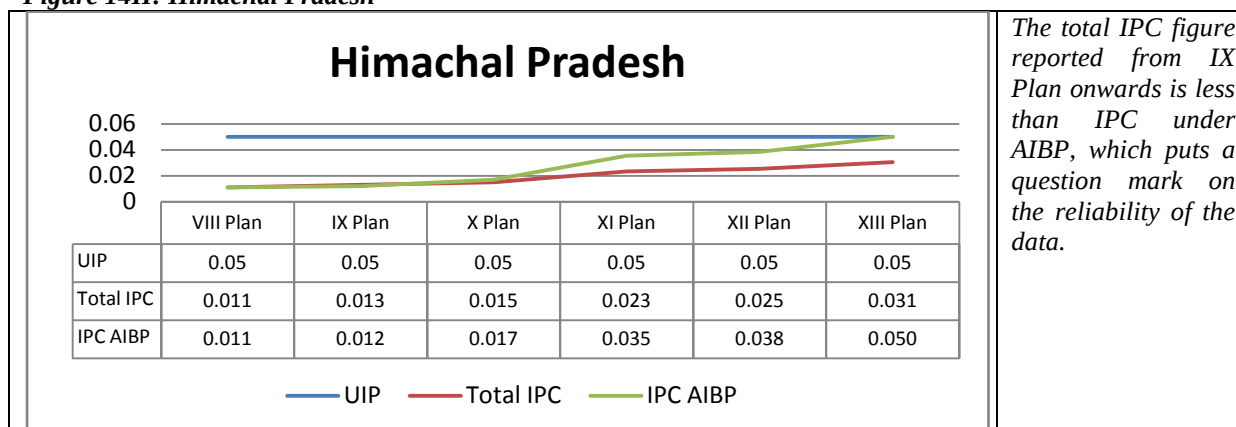


Figure 14I: Jammu & Kashmir

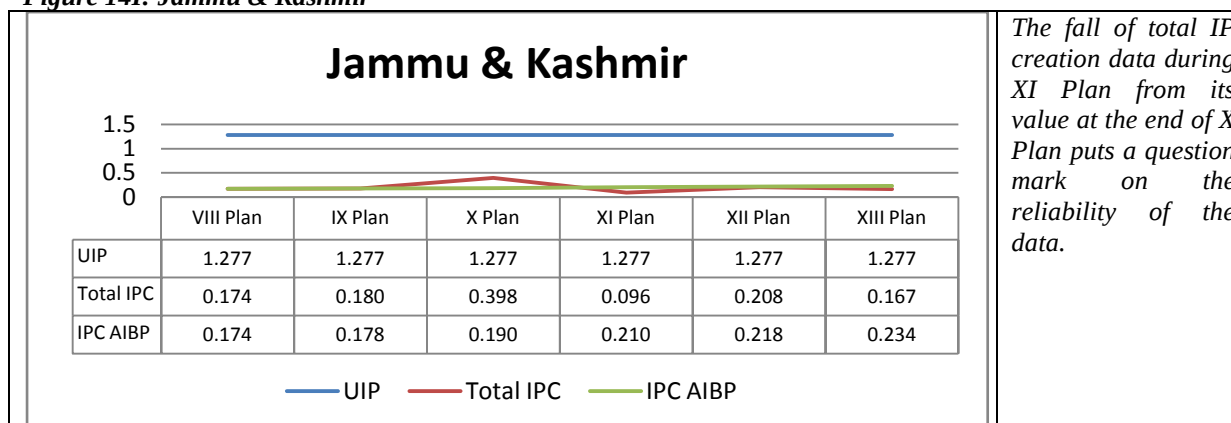


Figure 14J: Jharkhand

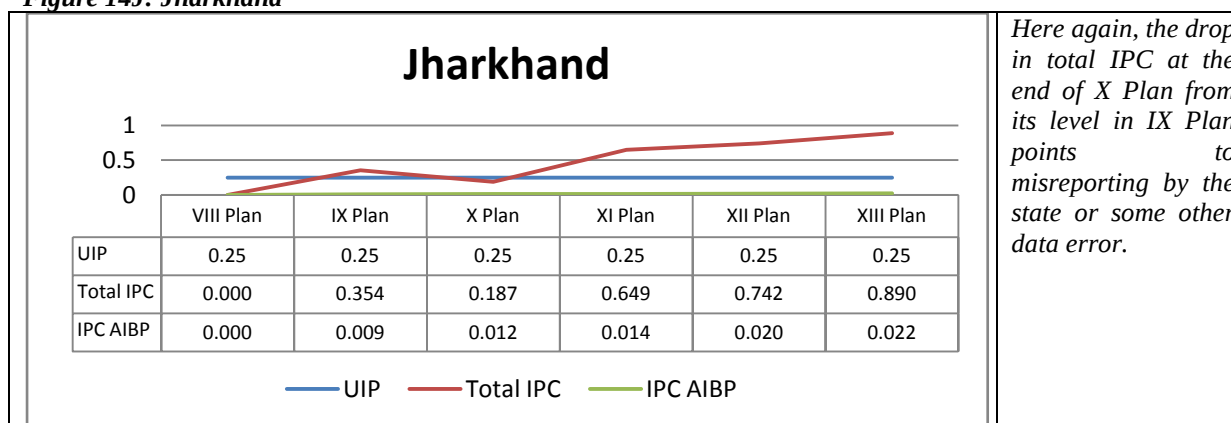


Figure 14K: Karnataka

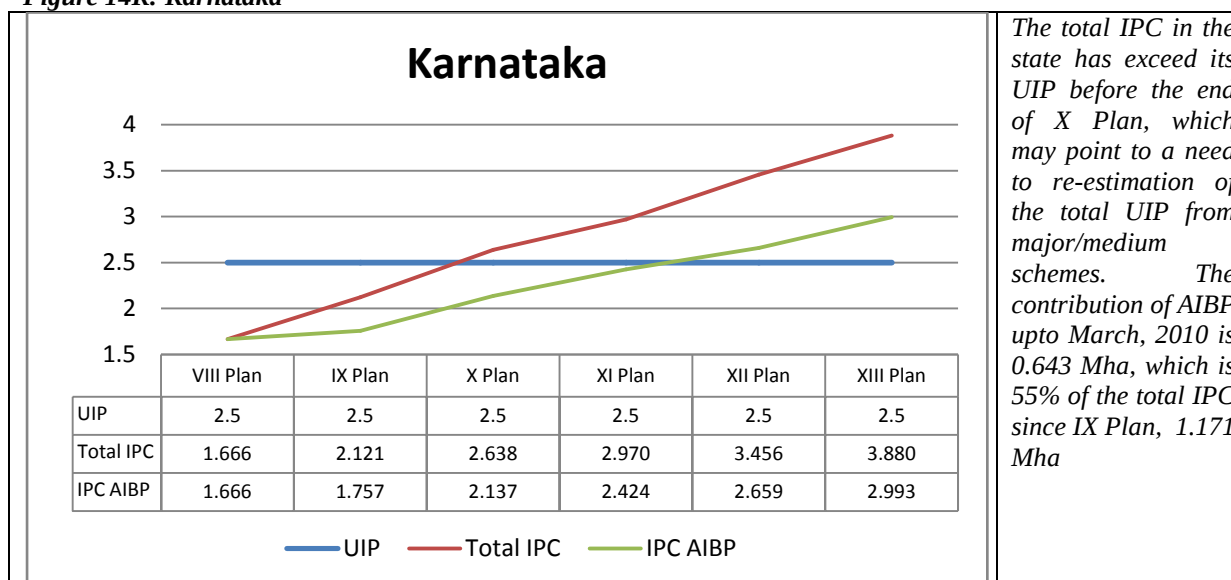


Figure 14L: Kerala

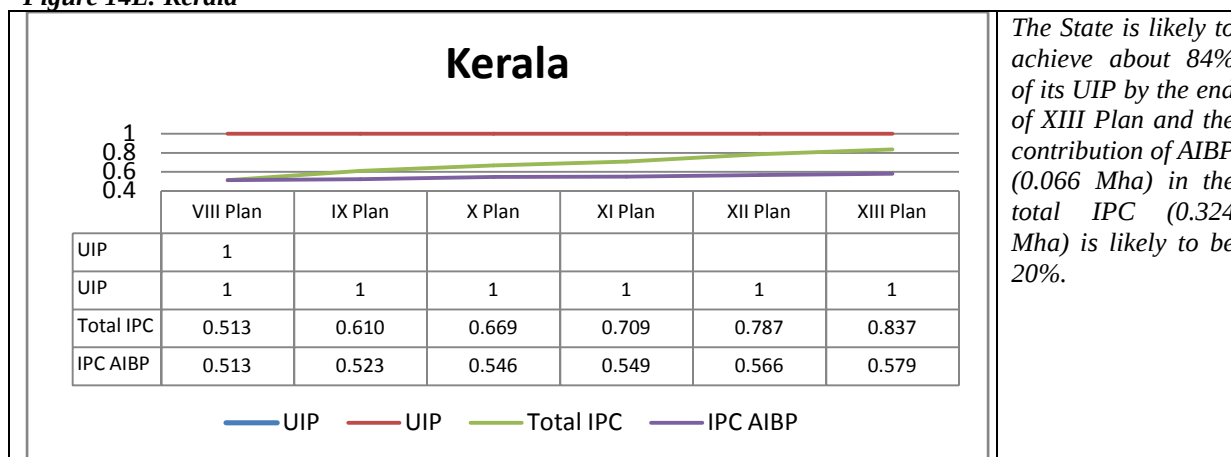


Figure 14M: Madhya Pradesh

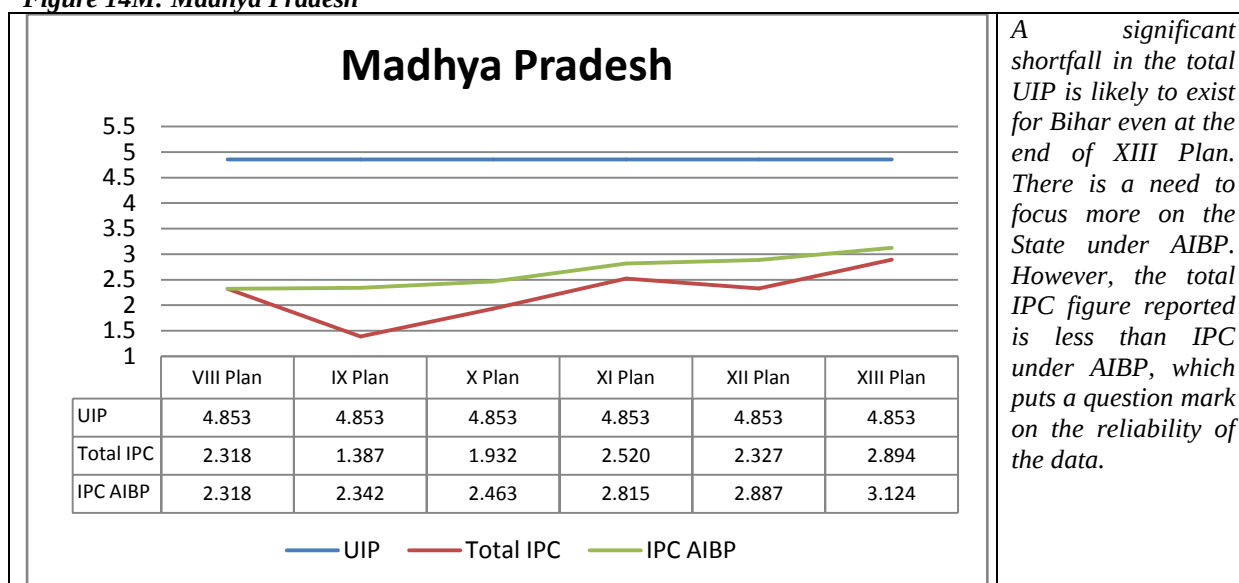


Figure 14N: Maharashtra

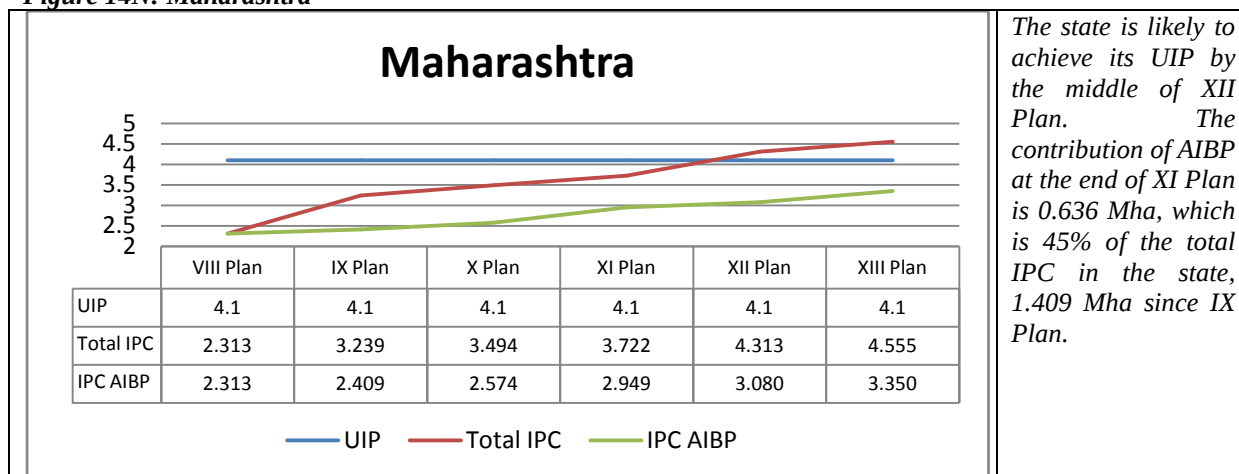


Figure 14O: Manipur

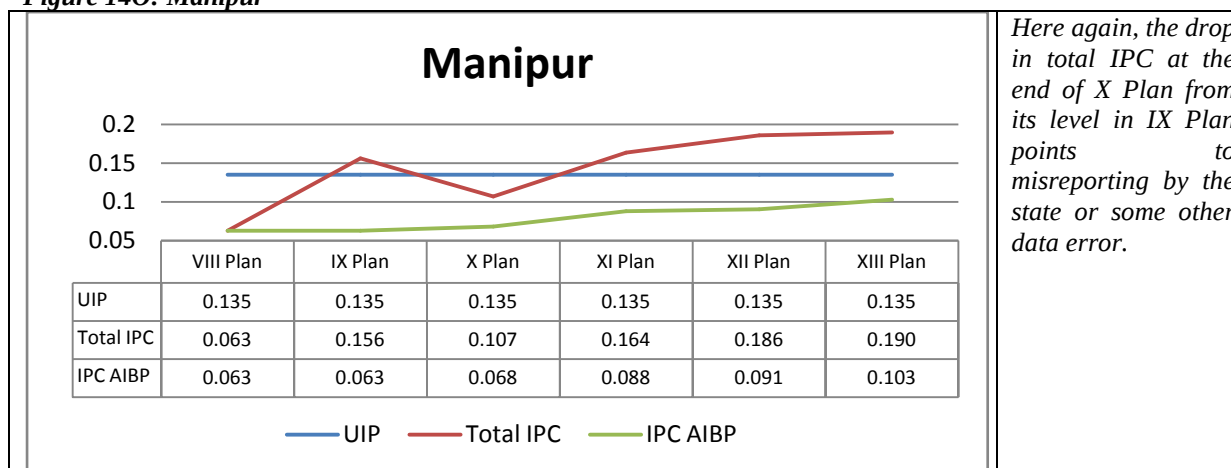


Figure 14P: Orissa

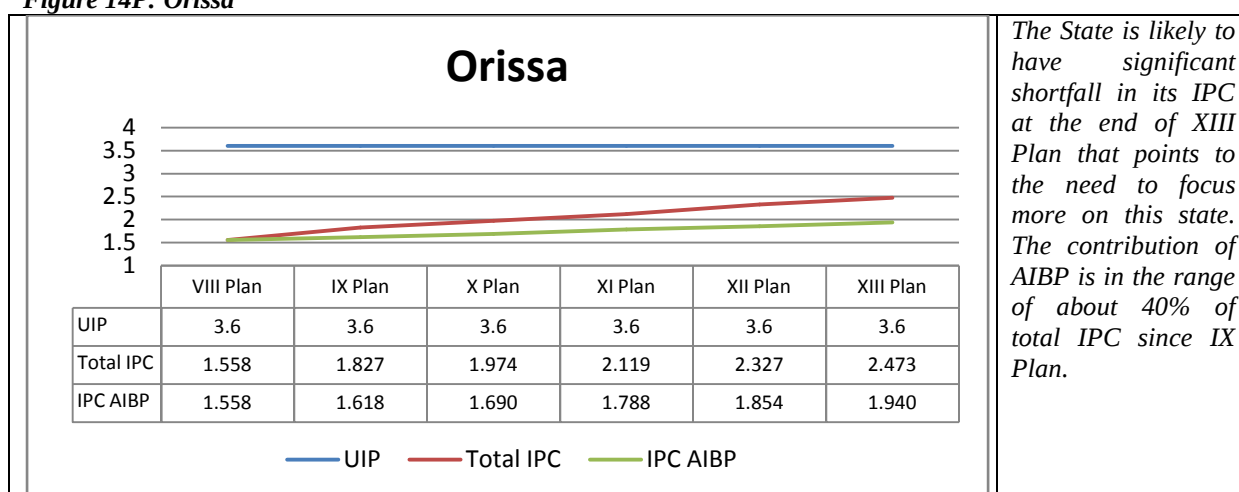


Figure 14Q: Punjab

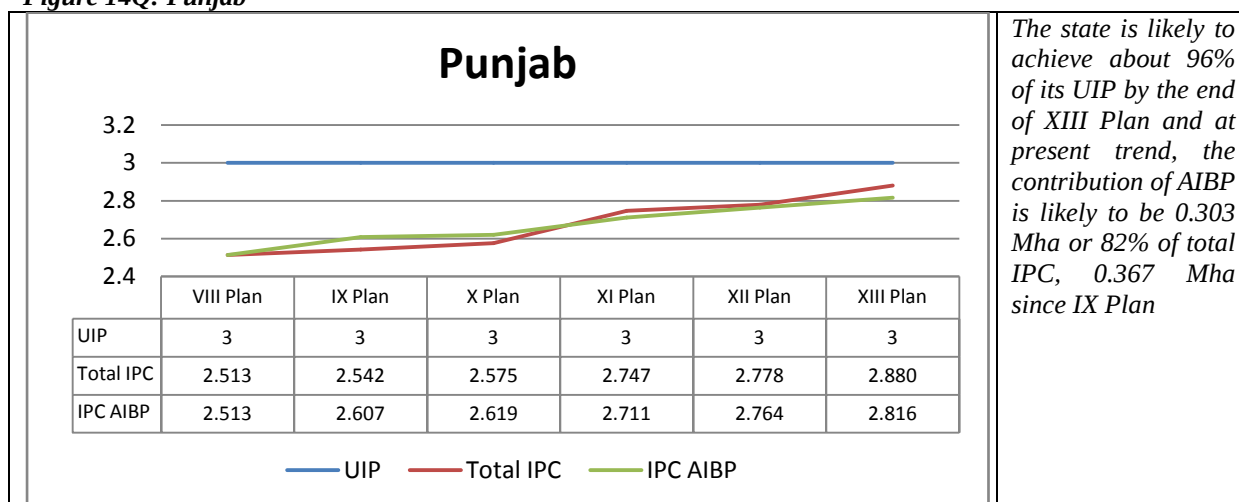


Figure 14R: Rajasthan

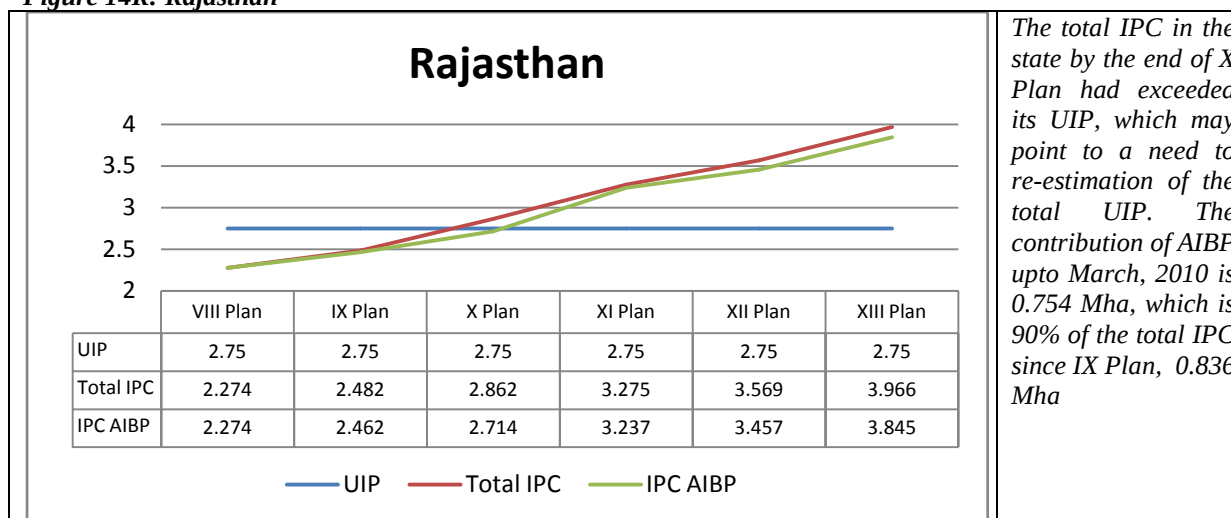


Figure 14S: Tamilnadu

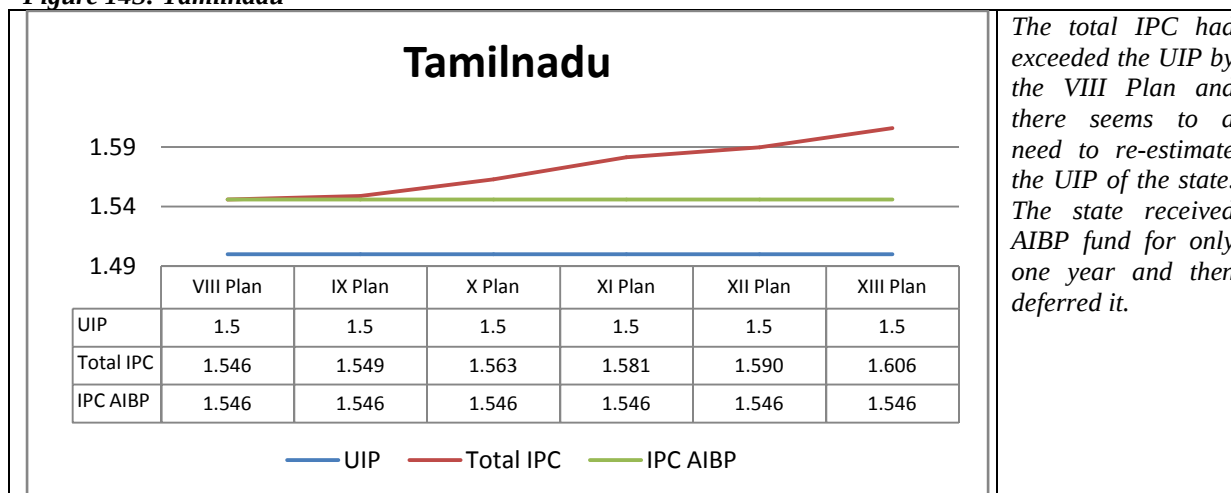


Figure 14T: Tripura

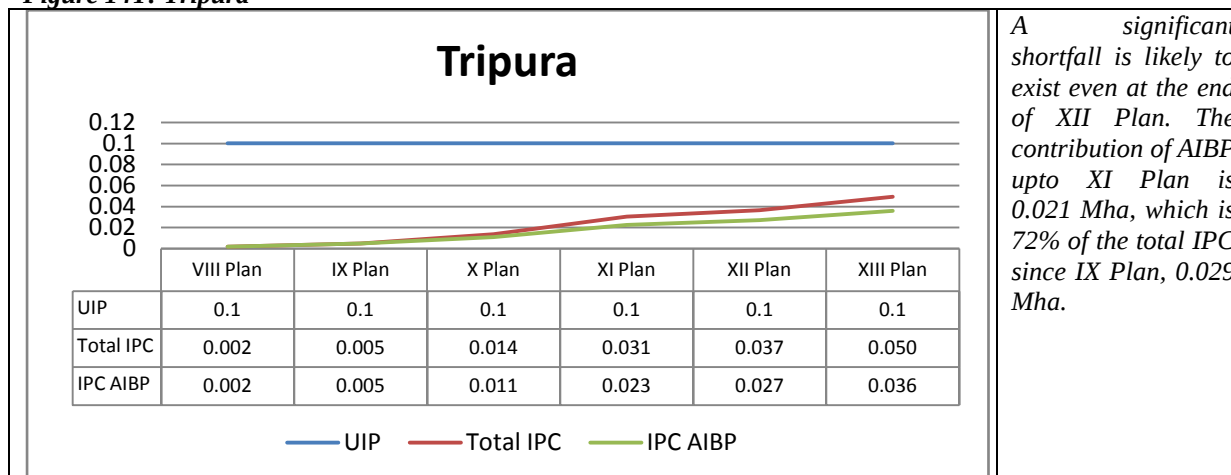


Figure 14V: UP/Uttaranchal

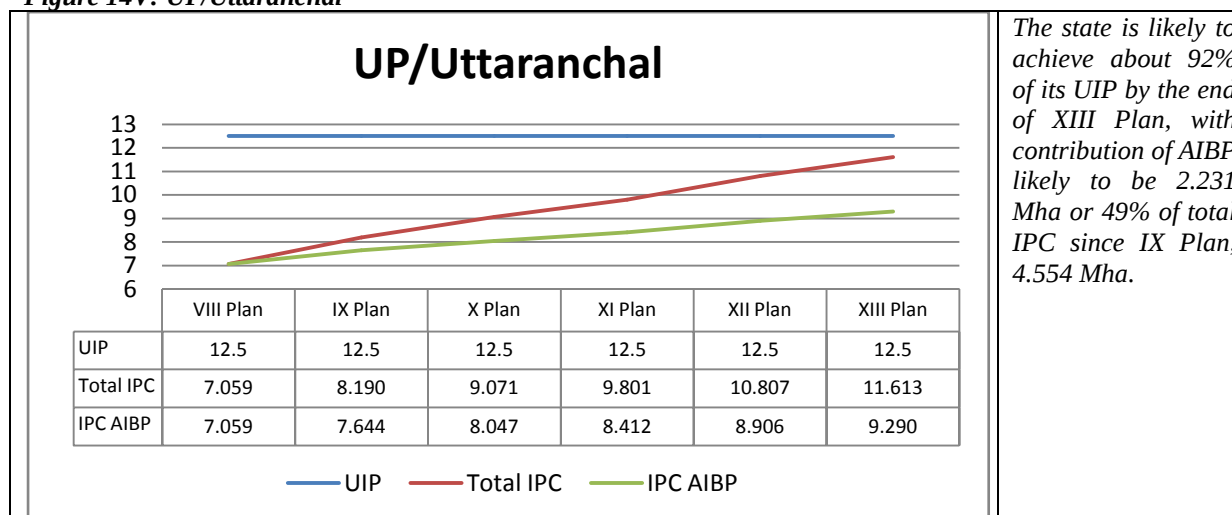
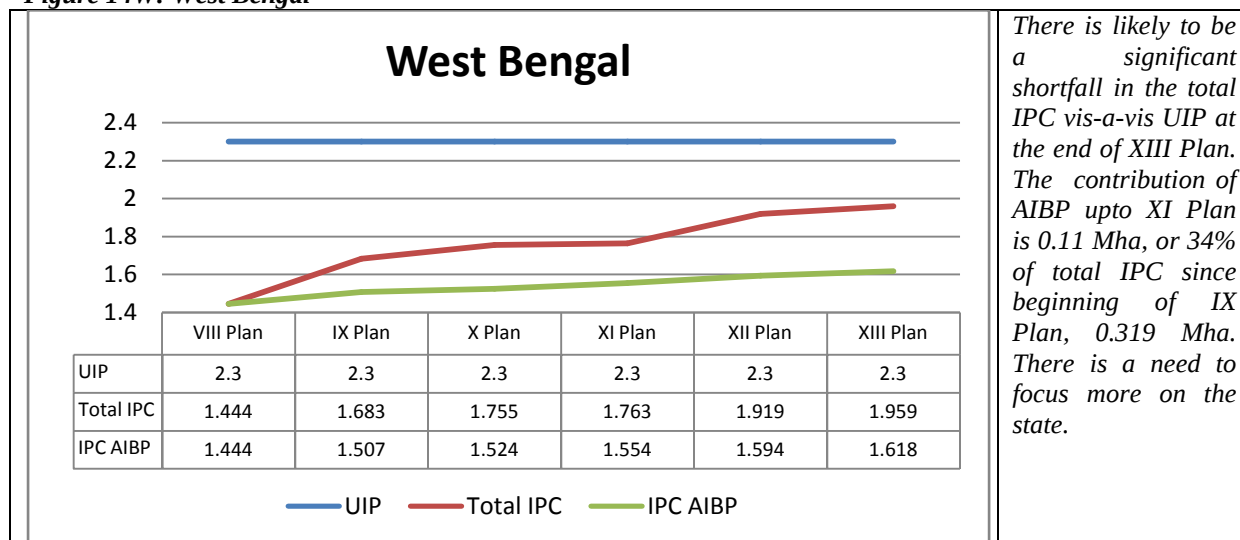


Figure 14W: West Bengal



Plotting the same for the total IPC and IPC from AIBP vis-a-vis UIP for the country as a whole by including the states which have received AIBP assistance for major and medium irrigation projects, the picture looks like that given in Figure 15.

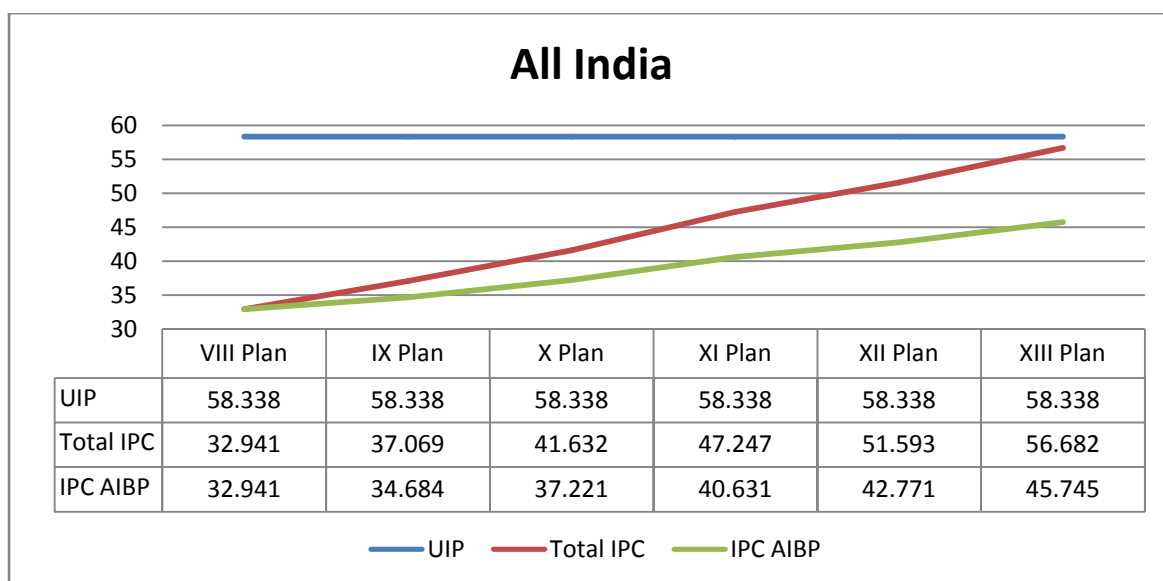


Figure 15: Total IPC and IPC from AIBP vis-a-vis UIP

An overall projection can be made about the time by which the total IP from major and medium is likely to achieve the estimated UIP for the country. By the end of XIII Plan, it is possible that the total IPC is close to 97% of the Ultimate Irrigation Potential estimated from the major and medium segments. The contribution of AIBP in the total IP created since IX Plan beginning upto XIII Plan is likely to be 12.8 Mha out of 23.7 Mha, or approximately 54%.

One of the most important challenges facing the MMI sector is the growing gap between irrigation potential created (IPC) and irrigation potential utilized (IPU). As the Table 2 shows, until the end of the III plan, IPU closely trailed IPC. Since then, the gap between IPC and IPU has steadily grown from less than 1 million ha during the mid-1960 to over 6 million ha around 2002 according to the CWC figures. Examining the incremental IPC-IPU gap suggests that during recent plans, the capital investment required to add a hectare under MMI is twice the level assumed at the time of planning¹. The gap between the IPC and IPU remains as one of the biggest problems in the irrigation projects funded under AIBP. Even though AIBP funds are meant to create irrigation potential, the widening gap between IPC and IPU has been the cause of a lot of criticism leveled against the effectiveness of the programme². The Task Force on Irrigation constituted by PMO under the Chairmanship of Member, Planning Commission also looked in detail on the issue of IPC-IPU gaps and identified various factors responsible for gap between irrigation potential created and its utilization³.

However, what is even more worrying than this problem is the lack of credible information needed to understand the true picture of the IPC-IPU gap and its causes. There is the issue of reliability of data on IPC furnished by the State Governments to Planning Commission or Central Water Commission, as indicated in our analysis as well above, because in many States considered in the analysis here, there are clear evidence of misreporting of data or data error caused by some other reasons.

5. Conclusion

It has been clearly established from the above discussions that Accelerated Irrigation Benefits Programme has helped to accelerate irrigation development during the last three plan periods. But as already mentioned above, the widening gap between irrigation potential creation and utilization has been a matter of deep concern. The real concern is not simply about the gap but the apprehension that potential creation itself may not be authentic to the last detail. In spite of the fact that AIBP has done precious little to rectify the problems and deficiencies in

¹Evaluation Study of AIBP, Planning Commission, Programme Evaluation Organisation Report No. 214, Nov 2010.

²Performance Audit of Accelerated Irrigation Benefits Programme (AIBP), Report of the Comptroller and Auditor General of India, Union Government (Civil), No. 4 of 2010-11CAG Report

³Report of the Task Force on Irrigation, Planning Commission, May 2009.

irrigation sector, it has to be acknowledged that it has created an indelible niche for itself in the history of irrigation development in independent India. It is firmly ingrained in the irrigation development plans of all the major States. But this situation has vested a 'weighty' responsibility on a Scheme which was conceived as nothing more than a funding mechanism in the first instance. It is still continuing to be so, but the country has more expectations. The scope of AIBP is likely to be widened further to include also Command Area Development Programme in future. But it has to be realized that the problems of water resources sector in the country is not about financial support only. Right at the beginning of this Paper, it has been brought out that the achievements under AIBP have not been very satisfactory. It is high time to have a serious introspection of irrigation project planning and management.