

Accelerated Programmes: What Can the Water Sector Learn from the Power Sector?

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The Government of India's 15-year old Accelerated Irrigation Benefits Programme has come under much-deserved criticism for all-round non-performance. The AIBP needs to be taken back to the drawing board and redesigned, based on the Accelerated Power Development and Reform Programme, which encourages and supports states to undertake management reform, promote accountability, restructure incentives and improve all-round performance of power utilities. This will accelerate irrigation benefits more than simply funding more dams and canals as the AIBP has done all along.

The Accelerated Irrigation Benefits Programme (AIBP), Government of India's (GoI) flagship programme to support states in public irrigation projects, has long been in need of reform. AIBP was designed as a programme to support "last mile projects" (Chidambaram 2004), that is, projects which are nearly completed but whose full benefits can start flowing only after small, incremental investments are made. Yet, the AIBP has been used mostly for funding new projects, such as Gujarat's Sardar Sarovar Project which has many miles to go before its irrigation benefits begin flowing. This year, the Jharkhand chief minister walked away with a multi-thousand crore AIBP bonanza from the Planning Commission for a brand new irrigation project on the Subarnarekha (Ojha 2011).

Right from its inception in 1996, AIBP has experienced a relentless mission drift. Its key design principles have been emasculated by all its stakeholders – state governments, GoI's Ministry of Water Resources (MOWR) and the Central Water Commission (CWC), and, above all, the Planning Commission. It is a testimony to AIBP's abysmal performance that against the nearly Rs 43,426 crore sanctioned until December 2010 for completing last mile projects in surface irrigation as well as in rehabilitation and modernisation of old ones, less than 6,00,000 hectare in new irrigation potential has been claimed to be created.¹ Moreover, much of this is paper potential and the actual area irrigated by all public irrigation projects in the country has declined during the AIBP years, as was confirmed by a mid-term review of the Eleventh Plan. Land-use statistics (LUS) show that between 1996-97 and 2002-03, the area under canal irrigation declined by 2.4 million hectares or 13.8% (Janakarajan and Moench 2006). Irrigation planners find LUS data unreliable; but even the quinquennial Minor Irrigation Census

shows the same trend. The more money AIBP invests in irrigation, the less irrigation India gets. Public irrigation is anything but accelerated under AIBP.

Despite being a massive money guzzler, AIBP has not been subjected to a rigorous, independent evaluation. The Project Evaluation Organisation of the Planning Commission (2010: 289) lauded AIBP for "spectacular increase in the irrigated area" but thanks to the inability of states to generate resources, "not only the sustainability of government run irrigation system is in danger... its impact on water use efficiency and equity has been dwindling". Moreover, surveys showed that farmers who benefited from the AIBP were in no way better off than the control group excluded from AIBP!

Performance Audits

A more realistic appraisal is, however, provided by two performance audits of the AIBP undertaken by the Comptroller and Auditor General of India (CAG) – in 2004 and 2010 – which have lambasted the government for its total failure in AIBP (CAG 2004, 2010). The 2004 CAG audit was more an audit of procedure than performance, and it criticised AIBP for frequently modifying its guidelines – six times in 10 years – to accommodate states' demands in the name of course corrections. The CAG recommended that after all these modifications, GoI should stick to the guidelines and follow them in letter and spirit. Several other criticisms followed: the bulk of AIBP funds were cornered by a few states; projects were approved based on incomplete or shoddily prepared Detailed Project Reports (DPRS); clearances needed from ministry of road transport and highways, ministry of railways, and other agencies were seldom obtained nor was requisite action taken to complete land acquisition or conduct soil surveys.

Many AIBP projects got sanctioned even before ascertaining water availability. State governments often grabbed AIBP funds for projects which were already funded under other schemes. Even after AIBP funds were released to states, they were diverted to other uses. There were huge time and cost overruns. Many experts "are calling it nothing short of a scam" and states have treated AIBP "like a milking cow" (Nayar 2011). The chairman of the Parliamentary Public

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Accounts Committee (PAC) recently described AIBP as a “complex web of irregularities” (Parsai 2011).

The CAG came down particularly hard on the CWC and its lackadaisical implementation of AIBP. The Action Taken Report issued by the MOWR in 2006 made the usual noises about complying with CAG recommendations. However, a repeat performance audit of AIBP by the CAG in 2010 confirmed that nothing had changed, and the AIBP was back to its business as usual mode. The 2010 CAG report repeated the same litany of AIBP ills: dilution in the focus and objectives of the programme, more modifications in guidelines to suit specific demands, total lack of data to monitor AIBP impact, failure of beneficiary states to meet the basic reporting requirements, reporting by states of incomplete or even non-commissioned projects as complete ones, heavy time and cost overruns, cornering of AIBP funds by a few states, as well as massive diversion to non-AIBP projects.

Scope for Improvement

Altogether then, the AIBP’s performance so far has left a great deal to be desired. Despite Rs 44,000 crore of additional support and 15 years, AIBP has neither helped accelerate canal irrigation nor provided worthwhile benefits. What is worse, neither the Planning Commission nor the MOWR have any system to track what the AIBP is delivering by way of results. What is far worse is that neither seems to think that there is need for credible monitoring of public investments in irrigation.

The CAG reports, the Planning Commission evaluation and the PAC have all offered tepid suggestions for improving AIBP outcomes by tightening the implementation of the programme and holding state governments accountable. What is needed, however, is a hard look at the programme design and its underlying assumptions. This is best done by comparing AIBP with the Accelerated Power Development and Reforms Programme (APDRP), which has begun playing a sterling role in reforming India’s power sector during the past decade.

Programme in Power

India’s power sector has been in much the same morass as the public irrigation sector. Rapid economic growth has been driving

relentless increases in demand for power and a push for ever greater investments in generation. However, without commensurate improvements in the management of utilities, more generation has meant only more losses, embroiling the power industry in an invidious political economy of corruption and populism. With aggregate technical and commercial (AT&C) losses, which include technical losses, plus the gap between billing and collection, averaging 34% against China’s 8%, India has the distinction of having one of the most inefficient power systems in the world.

As Deepak Parekh once argued, “the power sector is a leaking bucket, with holes deliberately crafted and the leaks carefully collected as economic rents...The logical thing to do would be to fix the bucket rather than for ever making exaggerated estimates of future demand for power” (cited in Ramakrishnan 2001). The Accelerated Power Development Programme (APDP) was launched in 2000 in much the same spirit as AIBP: to support investment in modernisation of power infrastructure. But thanks to their openness to astute business leaders and public administrators such as Deepak Parekh, Nandan Nilekani, P Abraham, Gurudas Kamat and others, power sector planners realised the futility of generating more power only to lose even more.

APDP was criticised for being project-based and input-focused, rather than being performance and outcome-oriented (Parekh Committee 2002). The Tenth Plan accordingly recrafted APDP into an APDRP of financial support, designed to lower AT&C losses, improve financial and economic performance of the electricity sector, modernise transmission and distribution and improve customer service.²

The underlying idea was to attack the entire range of problems besetting the power economy, especially those of energy accounting and internal accountability. Agricultural power subsidies provided by state governments needed to be made transparent so that utilities no longer pass off technical losses as agricultural power consumption. High establishment costs of utilities – at 30% of revenue realisation – needed to be controlled. Asset management needed to be improved. Capacity building of utility staff needed to be undertaken in campaign mode. All power dispatched needed to be metered, at least at the feeder level, to promote accountability through proper energy accounting and auditing. Above all, there was need to enhance performance orientation at all levels of utilities’ functioning – generation, transmission and distribution.

While AIBP ignored irrigation management reform and kept the funding as brick

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Registrar

and mortar, APDRP tried to catch the bull by the horns by offering financial support in two streams. An “investment stream” was to support the development of “demonstration projects”; the “incentive stream” was to provide a “substantial reward” for states that were willing to go beyond “demonstration projects” and undertake enterprise-wide reform for performance improvements and AT&C reduction (Parekh Committee 2002: 9). The benchmark year was 2001, with APDRP offering 50% of the reduction achieved in cash loss over 2001 as an outright grant to the utility.

Modest Impact

APDRP's impact during the Tenth Five-Year Plan was, at best, modest. Most APDRP projects were sanctioned during 2002 and 2003. Almost all got delayed for no good reason. Project formulation, management and monitoring all left a great deal to be desired. Diversion of APDRP funds for routine operation and maintenance by utilities was rampant. As a result, few state utilities achieved significant reduction in cash losses or in AT&C losses. APDRP allocations remained underutilised. The Tenth Five-Year Plan provided Rs 20,000 crore for investment in modernisation and another Rs 20,000 crore towards incentives for cash loss reduction. However, all of Rs 6,000 crore were released on new investments; and only eight states earned a total of Rs 1,500 crore by way of incentive for reducing the cash losses. At the national level, average AT&C losses declined by all of 4% – from 36.8% in 2001-02 to 33.8% in 2004-05.

Unlike the insular AIBP, APDRP was subjected to several independent evaluations by The Energy and Resources Institute (TERI), SBI Capital, Tata Consultancy Services, Indian Institute of Management at Ahmedabad and Administrative Staff College of India at Hyderabad. Many of the recommendations from these evaluations were accepted. Based on these evaluations, the Abraham Committee recommended reformulating APDRP as R-APDRP (restructured APDRP) during the Eleventh Five-Year Plan, with modified guidelines and three key objectives to be achieved over a defined time frame (Abraham Committee 2006: 3, 39):

[1] to reduce AT&C losses, promoting transparency and accountability over one to three years; [2] to improve operational efficiency

and customer service excellence over three to five years; and [3] to create a smart grid with a self-billing system that adopts all generation and storage options, and supports energy flow across distributed geographies.

R-APDRP made major strides in creating the conditions necessary to reward successful reform in utilities against “agreed reform milestones” rather than expenditure statements (Abraham 2006: 33-34; Bhattacharya and Patel 2007: 51-52). The programme has aggressively promoted extensive use of information technology (IT) and IT-enabled services among power utilities, with remarkable impact on information flow and transparency. It has begun to release funds directly to utilities, instead of state governments, to reduce delays in disbursement. Funding is provided for independent assessment of performance against agreed milestones. Project plans are now required to have predefined time frames for completion. Project implementation on turn-key basis is encouraged. Above all, there is greater accent on accountability through focused monitoring of progress along key performance parameters, especially in urban areas with high customer densities where the scope for reducing AT&C losses is the greatest. The Abraham Committee (2006: 9) noted that:

AT&C Losses have been brought below 20% in 212 APDRP TOWNS in the country, of which 169 TOWNS have brought AT&C losses below 15%...The overall commercial loss of the utilities reduced from Rs 29,331 crore during 2001-02 to Rs 22,129 crore during 2004-05.

Even R-APDRP has not performed to expectation during the Eleventh Five-Year Plan. AT&C losses declined only at a rate of 1.6 % a year against a target of 9% a year.

Impact on Turnaround

However, the programme is beginning to have its imprint on the gradual process of turnaround in India's power economy. R-APDRP impact is clearly visible in new initiatives designed to modernise and professionalise the power distribution business. The completion of metering at over 96% of feeders has created the foundation for improved energy accounting and auditing, and begun to create a culture of efficiency and accountability (Abraham Committee 2006). Some states turned each feeder into a profit centre, in charge of a feeder

manager to improve customer service as well as collection. All these have been further aided by computerisation of operations and installation of online systems which are the backbone of APDRP projects. R-APDRP has also placed emphasis on and resources in capacity building of utility staff. Strong incentives for reducing AT&C losses and improving customer service by enhancing efficiency have complemented capacity-building investments very well.

The full impact of R-APDRP will be clear only after several years; and even then, it will be hard to isolate the impact of the programme itself from several other reform initiatives, such as the Electricity Regulatory Commissions Act 1998 and the Electricity Act of 2003. However, there are indications that reform of the power business has begun, at least in several large states with substantial power economies. Thirteen states have corporatised their state electricity boards (SEBS) and unbundled generation, transmission and distribution. Twenty states have created independent electricity regulators. Computerisation of billing, 100% metering at the feeder level, installation of capacitors at all levels are now widely accepted measures for reducing AT&C losses. States like Orissa and Delhi have experimented with privatising distribution, and some distribution companies (DISCOMS) are even experimenting with 11 KV feeders as profit centres.

Energy accounting, billing and revenue management are improving in many utilities. Approval of APDRP projects to be implemented on turnkey basis through pre-qualified contractors has improved the quality and speed of project implementation. A strong emphasis on effective management information systems to improve the operation and management of distribution systems in utilities and to expedite decision-making is evident. R-APDRP has encouraged utilities to use India's leading IT companies – such as Infosys, TCS, Wipro and others – to build modern management information systems as also to support organisation-wide change management programmes.

What Can AIBP Learn from R-APDRP?

Both AIBP as well as APDRP were originally created as resource support programmes, additional to pre-existing channels of

resource transfer by the centre to state governments, to help these governments tackle new and emerging challenges facing the water and power sectors respectively at an accelerated pace. AIBP kept funding new projects, and never pushed badly needed irrigation reform. APDRP also supported new investments, but improving utilities' efficiency and performance has remained its key focus. AIBP suffered a relentless mission drift by frequent changes in its guidelines. APDRP too changed its design; but each design change – from APDP to APDRP to R-APDRP – strengthened its mission to reduce AT&C losses and improve utility performance.³

AIBP always funded only capital investments; APDRP has turned to providing incentives for and rewarding improvements in operational efficiency, managerial transparency and accountability within utilities. Since incentive payments are based on achievement of agreed performance benchmarks, there is need to measure performance in a credible, verifiable manner. As a result, power utilities today generate massive amounts of information for use in planning and management. Although 10 states claimed incentives worth over Rs 10,000 crore during the 10th Plan, independent third-party evaluation of performance against agreed reform milestones ensured that only Rs 1,500 crore of incentives qualified.

Irrigation departments, in contrast, are more opaque than ever; more importantly, they collect little useful information that can help monitoring or decision-making. Neither the cwc nor the Planning Commission can provide any account of the outputs, outcomes and impacts of AIBP investments because in turn, state governments provide them no information.⁵

The cwc and Planning Commission have thus shown themselves unable to get state governments to work as effective and accountable partners in implementing AIBP. APDP had much the same problem when management reform in DISCOMS was anchored by the public sector National Thermal Power Corporation (NTPC), the Power Grid Corporation of India (PGCIL) and a clutch of other public sector organisations acting as advisors-cum-consultants to the DISCOMS. APDRP changed that by

involving India's private IT giants in supporting DISCOM reform. AIBP relies only on the cwc, itself overstretched and in dire need of capacity-building, to support state irrigation departments, and monitor and evaluate AIBP projects. The insularity of the water bureaucracy ensured that AIBP never got whetted by experts from industry, commerce and public administration from whom the APDRP benefited from time to time. Table 1 places in bold

wide-ranging reforms in the management of public irrigation systems by offering significant financial incentives for the achievement of agreed reform milestones. (2) Non-Lapsable AIRP Fund: AIBP's project focus is unsuitable for catalysing reform. Deep reforms may take place over several years; state governments may not take AIRP seriously unless GOI shows long-term commitment to reform by creating a non-lapsable AIRP fund.

Table 1: Contrasting the Design of APDRP with That of AIBP

	R-APDRP	AIBP
Core objective	Reducing AT&C losses by reforming management of utilities and modernising distribution infrastructure	Support for more construction, primarily of last-mile projects to speed up irrigation benefits.
Programme driver	Outputs and outcomes against agreed performance benchmarks, ascertained by third-party evaluation	Expenditure-driven programme, without any feedback from beneficiaries on how the money was spent and to what effect.
Nature of central support	50% for investment and 50% for outcome-linked incentives	All for construction.
Outcome monitoring	Strong, with large third-party input	None at all; even figures of potential created are widely suspect.
Capacity-building	Strong, with involvement of leading private sector IT-enabled services (ITES) and other players	None at all; no attempt to reform the insular, construction-driven culture of irrigation departments or to improve management skills.
Basis for changes in design and guidelines	Independent evaluations of programme results and high-level committees such as those chaired by Nandan Nilekani, ⁴ Gurudas Kamat (2006), Deepak Parekh (2002), Abraham (2006).	Political haggling between state leaders and the Planning Commission. Hardly any evaluation, leave alone independent evaluation; MoWR/CWC attitude towards monitoring and evaluation of AIBP defensive more than forward-looking.
Monitoring and evaluation of performance against agreed milestones	Strong; extensive use of ITES; independent and reputed external agencies; strong support for data generation on outcomes	Non-existent; projects sanctioned based on incomplete, shoddy DPRs; state governments furnish little data on status of AIBP projects; CWC neither inspects nor gets third-party evaluations done.
Source of technical expertise and new ideas	R-APDRP involved leading research and consulting organisations for working with the programme as well as state utilities	No effort to introduce new ideas and external expertise; CWC, MoWR and PEO performed all roles of approving projects, inspecting progress, monitoring and evaluating outcomes.

relief the stark contrast in the conceptualisation and implementation of APDRP and AIBP.

Way Forward

The APDRP experience offers a strong basis for AIBP reform. In particular, six lessons from APDRP should be useful in recasting the AIBP into an Accelerated Irrigation Reforms Programme (AIRP) which may help India make the crucial and much-delayed transition from an irrigation *development* mode to an irrigation *management* mode:

(1) Reward Reform: GOI should focus a new-look AIRP on encouraging and supporting state governments to introduce

(3) Reward Systems for Reforms at Different Levels: There is wide variation across states in their irrigation reform orientation with states like Maharashtra and Andhra Pradesh in the forefront and many others trailing behind. An expert group, drawn from a wide spectrum of expertise in industry, commerce, public administration besides water management, needs to develop and recommend realistic mechanisms for identifying reform milestones and providing incentives for irrigation reform at several levels.

(4) Stem Mission Drift: Once agreed reform milestones are established, AIRP must strictly adhere to them; incentives must be paid based on independent third-party

appraisal of successful reform adoption; a standing committee of experts should accept or reject claims for reform incentives. (5) Expertise in ITES and Organisational Change: Public irrigation systems woefully lack systems for collecting and analysing information that provides feedback to their managers on areas and opportunities for performance improvement. Irrigation agencies should be encouraged and provided the resources to use quality expertise for building systems as well as their own capacities. Support for such assistance has been one of the key inputs of APDRP in power-sector reform; it can do the same magic with irrigation reform.

(6) Capacity Building for Irrigation Agencies: This critical task has been left so far to captive institutions of irrigation departments such as Water and Land Management Institutes (WALMIS) that have limited capacities themselves. If irrigation reform is to succeed, much more attention and resources need to be devoted to capacity-building of irrigation staff under AIRP.

Key to Reform

Key to effective design of AIRP is the third item in the list above. The first level reform could be defined in terms of a set of basic conditionalities in the memorandum of understanding (MOU) with states. These could be whether the state government has constituted an independent and functioning water regulator, whether it has imposed a non-trivial irrigation fee and achieved a minimum collection record, whether it has achieved some minimum ratio of irrigation potential utilised (IPU) to potential created (IPC), and so on. But higher level reform would require a simple criterion of sectoral performance that is easy to understand, measure and monitor, and is universally applicable. In APDRP, the key aim was to reduce AT&C losses, which readily translated into cash loss reduction of a DISCOM as a simple, measurable criterion for incentive payment. In irrigation, devising a simple, measurable performance criterion may be a challenge, especially given the lack of credible data. Irrigation fee collection per 10,000 cubic metres of storage (or water managed) might capture several dimensions of the performance of public irrigation. Another

criterion, of recent concern to the MOWR, is the ratio of potential utilised to potential created. The most appropriate irrigation equivalent of APDRP's cash loss reduction needs to be carefully identified. The best results of the reform might come when such a criterion is used to provide incentives for water management at the distributary level and below, as has been done to great effect on many Chinese systems (Shah et al 2004).

The public irrigation infrastructure that India has already developed over 200 years can deliver much more accelerated irrigation benefits if only it were better maintained. But, as the World Bank estimated in 2005, maintaining this existing infrastructure would cost Rs 17,000 crore a year (Briscoe and Malik 2006) against the actual maintenance spend today of less than Rs 1,000 crore (CWC 2010).⁶

By creating incentives and accountability, and by providing irrigation departments the resources to maintain and manage the infrastructure already created rather than building new projects, AIRP can bring about a much-needed transformation in Indian irrigation.

NOTES

- 1 Accessed 18 April 2011: <http://www.wrmin.nic.in/index3.asp?ssid=741&subsublinkid=747&langid=1>
- 2 To be precise, APDP objectives were: (a) renovation and modernisation, life extension, upgrading of old thermal and hydel plants, and (b) upgradation and strengthening of sub-transmission and distribution network (below 33kV or 66kV), including energy accounting and metering in the distribution circles. A succinct description of the evolution of APDP into APDRP is provided in the Abraham Committee Report (2006: 1-3); also see http://203.193.148.117/apdrp/projects/about_apdrp.htm
- 3 While AIBP has released funds even when conditionalities were flagrantly violated, APDP was strict from the start. Under APDP, Punjab and Delhi were not sanctioned funds because they did not adhere to terms of a Memorandum of Understanding with the Ministry of Power (Parekh Committee 2002).
- 4 The Nilekani Committee report is not available in the public domain but Dutta (2009), a news report based on an interview with Nandan Nilekani can be found online.
- 5 The CWC commission studies new irrigation potential by remote sensing data. But these can hardly show the AIBP impact because satellite data cannot distinguish canal-irrigated areas from groundwater-irrigated areas that dominate Indian agriculture.
- 6 CWC (2010:5) Figure 1.2 shows that working expenditure on major and medium systems in the country in 2006-07 was around Rs 9,000 crore. Chart 1.4 (p 6) shows that maintenance and repair expenditure was around or less than 10% of total working expenditure on major and medium irrigation systems.

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