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SOCIAL INFRASTRUCTURE

Citizens often have strong opinions on areas that should remain within the exclusive competence of the government. The provisioning of drinking water and sanitation, education, and health defines the quality of life of citizens. These services affect day-to-day life of people and have long-term impact in terms of longevity and earning capacity. There are many issues in each sector, as interface with people is direct; the methodologies used to deal with some of the intractable issues are quite diverse. We have chosen to include, in each sector, a few models which are illustrative but replicable and affordable anywhere in the country.

WATER, SANITATION, SWM

Water and SWM models given in this chapter offer hope that drinking water and a clear environment can be provided to almost all citizens at competitive prices. Piped drinking water which is treated and transported to households is an expensive commodity and more so in a sparsely populated villages. However, villagers need good quality potable water as much as anyone else in the country. Prasad Raju describes in his paper, the Byrraju Foundation's 4P model of quality drinking water, how the foundation has turned handicaps into opportunities in providing drinking water to villagers. Interestingly, many villages and multilateral aid agencies have adopted this model with success. Organizations which may be required to back these solutions may not be available everywhere but there is no reason why that role cannot be played by an NGO.

Where there is water, there will be waste water. People generally do not care about health hazards which waste water can pose. Sonia Sethi in her paper on Maharashtra's community-based model for water and wastewater management highlights the integration of water supply and

sanitation projects in the state. A notable aspect of the model is that it can be easily replicable in other states as well.

Almost all local authorities spend large sums of money in wastewater treatment. Wastewater services generally are contracted out, but infrastructure is owned by local authorities. Anupam Rastogi and Shreemoyee Patra describe the Delfand Water Treatment model where the local authority uses a financial model which is most economical without compromising on the services. Competitive bidding of this model has ensured that the local authority gets value for money while financial instruments are used to ensure competitive O&M contracts as well.

Until 2000, solid waste management in India was accorded low priority by local authorities. The intervention of the Supreme Court changed the scenario and various models are used by different local authorities to handle SWM in their areas. Vivek Agarwal and Neeraj Gupta describe these models in their paper and highlight how these models are implemented in various cities and how local authorities have been able to save money by using competitive bidding.

HEALTHCARE

The Pradhan Mantri Swasthya Suraksha Yojna (PMSSY) is a project to develop six AIIMS-like apex health care institutes over the next three years. Given the experience of service delivery in the public sector, it is useful to explore alternative procurement methods to ensure better service to the people. This is especially so for a premier medical institution, where education and research have equally high priority. These cannot be jeopardized by the day-to-day management issues of a large general hospital serving the general public.

Partha Mukhopadhyay argues for a PPP approach to PMSSY based on working domestic and international models. It decomposes the apex health care institute into a General Hospital similar to a large public hospital, and an Institute responsible for referral care, teaching, and research. A private concessionaire will be responsible for the building, operating, and maintaining the General Hospital while the government will be responsible for the Institute. The General Hospital will share diagnostic facilities and extend whatever assistance is required to the Institute for teaching, such as internships. This approach is expected not only to complete the project faster and ensure better service delivery during the operational phase in a cost-effective manner, but also to provide better conditions for education and research. The author argues for implementing PMSSY in a PPP mode, to complete the project faster and to ensure better and cost-effective service delivery during the operational phase.

Some studies argue that PPPs are not suited for the delivery of clinical and schooling services as the quality of outputs provided by a profit-driven private operator are likely to be lower than what would be achieved by the public sector. Without appropriate and credible means of control and quality indicators from the public party, political opposition to extending PPPs to core areas of public service provision will certainly arise.

Primary Health Centres (PHCs) are important links in providing health care in villages but these centres remain underutilized due to non-availability of trained staff. Ratna Devi and Rama Raju in their paper on the Byrraju Foundation's PPP model for village PHC describe how the foundation has handled these roadblocks and provided quality services at a price which villagers can afford. Indiresan, on the other hand, describes an inclusive development model for health care in his paper which can be applied anywhere in the country. He illustrates his model using the examples of Vellore Medical College, Vellore and Narayana Hridalaya of Bangalore.

Nevertheless, health care for a large number of us remains a challenge. Only 84 million people are covered by CGHS and other government, employer, or commercial insurance. Out of these only 11 million are covered by commercial insurance. Ashoke Bhattacharjya and Puneet Sapra reckon that financing health care for India's large uninsured population poses a complex health policy challenge with fundamental economic development implications. While a one-size-fits-all solution is not an answer, a combination of successful financing models is likely to address current financing limitations. Among these models, private health insurance offers a viable health care financing solution for a large segment of India's population. The paper underscores the potential role and significance of various forms of health insurance as an

enabling mechanism for promoting affordability and access to health care. In particular, it emphasizes the critical role that could be played by a well-designed and robust private health insurance system to expand health care coverage and access to a substantial chunk of the population that does have some ability to pay for insurance but cannot bear the financial shock of catastrophic illnesses.

Bhattacharjya and Sapra suggest that private health insurance has an important role to play in a country like India, which faces enormous public health challenges and has a very large number of citizens who will continue to rely on public funded programmes for basic health care.

EDUCATION

Whereas graduates from IITs and IIMs are a common sight in Silicon Valley of the US, Wall Street, London, Hong Kong, Singapore, and are the envy of many developing countries, primary, secondary and vocational training for majority of Indians remain in shambles. The base of our education pyramid is very weak. Reddy and Jacob in their paper on the Byrraju Foundation's PPCP Model for Education describe how this base can be made stronger by using new ways of teaching children.

Anupam Rastogi and Shreemoyee Patra critically look at the primary education system in their paper on Education Vouchers and One Campus and Many Schools Models to deliver primary education in remote areas. They suggest that primary education in the country can be improved if an element of competition is brought into the system at the primary level.

Vocational education has been a feeble sector in India. Partha Mukhopadhyay's paper outlines a PPP approach to upgrading existing Industrial Training Institutes (ITIs) to enable the exploitation of the benefits of private delivery in craftsmen training which requires a high level of initial investment. It will also enhance linkages between these ITIs and industry. The performance based contracting system specifies a cost sharing arrangement with the private partner in a manner such that the return to the private partner depends on its ability to find suitable employment for the graduates of the Institute. Bonuses are built in for long-term employment in the organized sector. Most importantly, this PPP structure will enable the upgradation of ITIs to happen almost immediately while the expense on this programme will be deferred and spread out over many years.

The model will enhance the supply of tradesmen with requisite skills requiring a high level of capital investment in training facilities and improve the linkage of the ITIs with industry. It also accelerates the process of upgradation of ITIs in a manner that allows the expense to be deferred and spread out over many years, while the upgradation happens almost immediately, within a year or so.

7.1

The Byrraju Foundation's 4P Model of Quality Drinking Water in Villages

D.R. Prasada Raju

Improvement in the quality of drinking water significantly benefits the health and well-being of people. The Byrraju Foundation, a not-for-profit organization dedicated to rural transformation, has embarked upon the mission of providing quality drinking water conforming to WHO's standards in villages of rural India. Among the villages where the Foundation is working, 63 per cent are dependent on irrigation canals and the remaining 37 per cent of villages use ground water sources.

Under the state-run Rural Water Supply (RWS) Scheme, most of the villages, especially in the Godavari River delta region, have a pond, fed by the irrigation canal at regular intervals, storing the required quantity of water. The water in the pond is passed through Slow Sand Filters (SSFs) followed by chlorination, occasionally. This water is pumped into an overhead tank for distribution through a system of pipes to the few homes that have individual connections but majority of the supply is through common stand-posts.

The filtered water supplied to villages has coliform, turbidity, chlorides, and other physical as well as chemical impurities in excess of permissible levels. The Foundation's survey of the villages revealed that out of 40 litres of water per capita per day supplied by RWS, about 2 litres are used for drinking purpose, which is about 5 per cent of total quantity to be supplied in villages. It is much easier to treat 5 per cent of water supplied to drinking water standards rather than the entire quantity. So, the Foundation set up small community-based plants producing 1000–2000 litres of potable water per hour, for every three villages. The plants called Sujala Plants use reverse osmosis (RO) and UV Treatment to provide quality water conforming to WHO drinking water standards. They are operated by the trained youth from the village whenever power supply is available. Sustainability is ensured by collection of user charges to cover O&M costs. Quality of the product water is monitored strictly and local Science Colleges are involved in regular testing and quality control.

OPERATION AND MAINTENANCE OF SUJALA PLANTS

In order to ensure satisfactory performance of the Sujala plants, the quality of input water is checked thoroughly

for various parameters like turbidity, physical and chemical impurities, bacteria, and so on, on a continuous basis. Based on the levels of impurities/bacteria, process parameters are set for effective removal of the same. To overcome the problem of power-cuts, the plant is operated on single-phase, as it is available for twelve to sixteen hours a day in a village, with flexible timings, using voltage stabilizers for maintaining quality of power. 100 per cent standby for all the critical components, like pumps, motors, UV lamps, voltage stabilizers, multi-port valves, and adequate stocks of consumables are maintained within close proximity to the Sujala Plant. In some villages, which distribute a large quantity of water, a diesel generator has been installed to meet power requirements.

Annual maintenance contracts are entered into, initially for five years, with the suppliers of the plant to ensure trouble free operation. For every five plants, a maintenance team is deployed within close vicinity of a cluster of villages by the supplier of equipment so as to attend to regular preventive and break-down maintenance. The layout of the plants and components has been standardized so that the plants operating under similar conditions can effectively share inventories for proper operation. The Gram Vikas Samiti (GVS), a team of volunteers formed and institutionalized by the Foundation in each of the participant villages, monitors the Foundation's initiatives at the village level. The GVS member identified for water programme oversees the O&M of the Sujala plant.

FINANCING OF SUJALA PLANTS

The plants are run with the active participation and involvement of local bodies and villagers while the Foundation shares the initial costs of setting up. In order to ensure its sustainability, the cost of O&M has to be covered by the beneficiaries through user charges for the consumption of water.

COST OF SUJALA PLANT

The capital costs and operating costs of a Sujala plant are given below.

1. Building (500 sq feet covered area):	Rs 300,000
2. Equipment	
(i) Conventional UV Process (TDS in raw water <500 ppm):	Rs 400,000
(ii) Reverse Osmosis Process (TDS in raw water >500 ppm):	Rs 500,000

The requirement of infrastructure is as follows:

1. Connected Load (single-phase): 5 KW (for RO Plant), 3 KW (non-RO Plant)
2. Land: 1500 sq ft (near main water source of Gram Panchayat)
3. Building : 500 sq feet

The Economics of Operation is given in Table 7.1.1. The concessional power tariff structure, within the low tension power category VI(B) for public water schemes in rural areas charges 20 paise a unit for consumption up to 2500 units of power and 50 paise beyond 2500 units, in a year. This levy is also applicable to community-based water plants running under panchayat–public–private partnership, thereby reducing the expected expenditure on power for the operation of a Sujala plant by 90 per cent of

usual charges. A few financial institutions have come forward to offer loans to cover the capital expenditure at the interest rate of 9 per cent per annum. Government of India, under the Swajaldhara scheme, grants subsidy to the extent of 30 per cent of capital costs for setting up of community-based plants by a team of individuals or self help groups in villages.

SHARING OF RESPONSIBILITIES IN THE 4P MODEL

Byrraju Foundation, with support from the Gram Panchayat, the village community, individual donors, corporates, and philanthropic organizations, set up ‘Sujala’ plants, making them true examples of panchayat–public–private partnership. Table 7.1.2 presents the roles and responsibilities discharged by various stake-holders in setting up of Sujala Plants in villages where the Foundation is working:

The product water is delivered in a 12-litre HDPE food-grade can at Rs 1.50 at the plant. Additional amount of Rs 0.50–2.00 is charged for its delivery by a rickshaw/van at the doorstep within the village as well as in neighbouring villages. Sujala water is distributed free of charge to schools, health centres, the aged, the Panchayat Office, and so on.

TABLE 7.1.1
Economics of Operation

Process	RO Process	Conventional
1. Rated capacity of plant (litres per hour)	1000	2000
2. Hours of operation	8	4
3. Production of pure water in litres a day (average)	7500	7500
4. Distribution of water in litres a day (average)	7000	7000
5. Expenditure in rupees per month:		
a. Remuneration (3 persons @ Rs 2500 pm)	7500	7500
b. Power (Rs 4 per Unit)	3000	1300
c. Consumables (alum, chlorine, chemicals, detergent, filters, etc)	2000	2200
d. Annual Maintenance Charges	5000	1700
e. Depreciation	2000	1800
f. Incidental expenses	1500	1500
Total	21000	16000
6. User charges (@ 12.5 paise a litre)	26000	26000
7. Surplus	5000	10000

TABLE 7.1.2
Sharing of Responsibilities in the 4P Model

Gram Panchayat	Community (including non-resident Villagers)	Byrraju Foundation
Permission to draw raw water	Minimum 50 per cent cost of equipment	Up to 50 per cent cost of equipment
Allotment of land (free)	Construction of building (500 Sq feet covered area)	Technical guidance and supervision in setting up the plant
Obtain power connection (3 or 5 KW) at concessional tariff	Participation in operation of plant and distribution of water	Testing of water and quality assurance

REPLICABILITY AND RESULTS

The 4P model of the Byrraju Foundation has been evaluated by many national and international agencies. United Nations Human Resettlement Programme (UN-HABITAT), as a part of Water for Asian Cities Programme, has enlisted Byrraju Foundation's support to set up Sujala Plants in a few towns in Madhya Pradesh as also in Laos PDR, Nepal, and Uganda. Byrraju Foundation has been rated as 'Best Water NGO: Water Quality' in India by

'Water Digest (a global magazine for water solutions)' and UNESCO for the years 2006–7 and 2007–8. Global Development Network shortlisted the 'Sujala' scheme among the three for 'Most Innovative Development Project' finalists award for the year 2007. The most satisfying result of this successful model is that the dispensaries run in villages served by Sujala report significant drop, about 30 per cent in patient visits, attributed mainly to the consumption of 'Sujala' water, free from harmful bacteria and physical and chemical impurities.

7.2

Maharashtra's Community-based Model for Rural Water Supply and Sanitation

Sonia Sethi

In both developed as well as the developing world, water supply services have historically been provided by the public sector. Even today, 95 per cent of the water supply services in the world are state owned. While a case for private sector participation in water supply has been built over the 1990s, empirical evidence of the last fifteen years shows only marginal investments by the private sector in water supply provisioning in pursuit of the UN millennium development goals.

In the Indian context, while it is pertinent to take note of the efforts that multilateral agencies and infrastructure companies are making in capacity building and experimentation with models for PPP in water supply, true success stories are few. Rural communities are widely dispersed and thinly spread, making returns on rural water supply systems low. Besides, the relative advantages of the BOT and the BOOT models of PPP for the community vis-à-vis the concessionaire are a matter of heated debate in this sector. An alternate model for service provisioning that is established, owned, operated, and maintained neither by the government nor the private firm, but directly by the beneficiary communities may perhaps be the most sustainable proposition for the sector.

BACKGROUND

The mission approach to rural water supply was signalled by the country-wide introduction of the Accelerated Rural Water Supply Programme (ARWSP) by the government in 1992–3.

In the specific context of Maharashtra that is pertinent for this chapter, this approach translated to a scenario wherein parastatal bodies such as the Maharashtra Jeevan Pradheekaran (MJP) and Groundwater Survey and Development Authority (GSDA) and the Zilla Parishad designed and executed water supply schemes for villages. Thus need identification, designing, and construction of the schemes was a top down exercise with no scope for the community to play any role save that of paying user charges for O&M. Communities were not educated on O&M practices, source protection, augmentation, sustainability, project implementation, source recharging, and economical use of scarce resources.

A community-based strategy was adopted in the country only in 1999 through the Sector Reform Project (SRP) on a pilot-basis with a thrust on a demand-responsive approach with community participation. The SRP was scaled up to the Swajaldhara Programme launched in 2002. The reform policy within the SRP focused on community ownership and management of water supply and sanitation facilities. Service delivery and management processes were sought to be strengthened with the involvement of Panchayati Raj Institution (PRIs) and stakeholders and use of appropriate technical and management options involving local communities.

GENESIS OF JALSWARAJYA IN MAHARASHTRA

In 1999, Maharashtra tested the efficacy of the Swajaldhara in four districts of Amravati, Dhule, Nanded, and Raigad

with the help of multilateral agencies and NGOs in capacity building of rural communities. The resonating success of this approach is testified by the figures that out of a total of 990 schemes taken up, 845 have been completed and 575 taken over by the community.

Between 2002 and 2006, schemes (largely of piped water supply) across the 33 districts of Maharashtra were sanctioned. Out of those, 504 have been commissioned and 1143 are in progress. In September 2003, Maharashtra signed the Jalswarajya project agreement with the Government of India to be implemented over six years from 2003 to 2009 at an estimated cost of Rs 1343 crore.

THE JALSWARAJYA MODEL

The community-based, demand-led water supply and sanitation scheme in villages of Maharashtra, where people initiate and governments and private sector facilitate service delivery, is a good example of a sustainable arrangement. Typically the said model is based on the principle that the O&M of the water supply & sanitation facilities be tested in the community. The services delivery and management of the assets involve active participation of the PRIs at all three levels—Gram Panchayat, Panchayat Samiti, and Zilla Parishad and the critical stake holders like women, the mahila mandals, youth organizations, and NGOs.

INTEGRATION OF WATER SUPPLY REFORMS WITH THE SANITATION CAMPAIGN

As in water supply, the implementation in sanitation too, was target oriented, prescriptive, and supply driven in the pre-reform period. The emphasis was on creation of physical infrastructure by providing subsidy. Community ownership and management practices for water supply were extended to sanitation facilities as well in Maharashtra between 2002 and 2006 during the expansion of the SRP.

A paradigm shift was witnessed in the emphasis of sanitation programmes from civil construction of toilets to behavioral change in the form of elimination of open defecation. The community, as against individuals or household, was targeted for transformation as the individual—target driven approach made way for outcome driven positioning of campaigns. Personal hygiene and environmental sanitation were emphasized as components of an overall holistic goal of sanitation. The mantle of all these reforms was placed with the PRIs rather than the central and state governments. PRIs were involved fully in strengthening decentralized service delivery up to the Gram Panchayat level from which point powers were devolved further to the village water & sanitation

committee (VWSC), mahila mandals, teachers, NGOs, and communities at large. The sanitation reforms were launched with flagship campaigns like the Sant Gadge Baba Campaign (SGBC) and the open defecation-free (ODF) village campaign with an eye on the sustainability of water source and water quality management.

SGBC

The SGBC, introduced in the year 2000, is a government initiated social reform movement that rewards villages on parameters in rural sanitation and cleanliness. Initially, the programme started with 5 rounds of evaluation of the village in question on predefined parameters at the Zilla Parishad, Panchayat Samiti level, district level, revenue division level, and ultimately at the state level. With experience, some modifications were introduced to raise the bar on expected standards. For instance, the prequalification criterion for participating in this programme was raised to at least fifty per cent achievement in ODF. Emphasis is also laid on bringing primary schools and anganwadis into the ambit of this mini social revolution.

The government invests a mere Rs 10 crore every year in SGBC in cash rewards to rural communities, an incentive that has led to the creation of a phenomenal asset base of water and sanitation systems worth Rs 800 crore in rural Maharashtra between the years 2000 and 2006. Villages are known to have constructed latrines, drains, soak pits, garbage bins, compost pits, solar lights, and so on. through voluntary labour with no additional grants from the state government in order to win the reward. Intangible benefits in the form of social harmony, community spirit, and brotherhood are an added bonus.

OUTCOMES

The key strategy being followed is the effective investment of public money in water and waste water management infrastructure development followed by a smooth transfer of assets to the village panchayat for operation and maintenance. This is a very welcome outcome, given that the disconnect between the decision-making and implementation mechanism on the one hand and the local bodies at the village level on the other was always a cause of acrimony at the time of handing over of water supply services in the past. Collateral benefit is reaped in terms of empowerment of women and disadvantaged sections of society through their involvement in decision-making and upgrading of services provided.

Participation of over 8000 villages in Maharashtra resulted in widespread realization and acceptance within the rural communities of the importance of managing

the water and sanitation services. The dissemination of information was hugely welcome. Mobilization of people also led to the creation of a positive social environment for communities to unite and counter divisive forces.

Over 3500 Panchayats in Maharashtra have become ODF villages. Sanitation coverage has increased from

9 per cent to 40 per cent in rural Maharashtra. Other state governments like Himachal Pradesh, Goa, Uttaranchal, Andhra Pradesh, and Karnataka have taken a cue from Maharashtra's model. Bangladesh, Philippines, and South Africa have also incorporated elements of this model in their countries.

7.3

Models for Solid Waste Management in India

Vivek S. Agrawal and Neeraj Gupta

Solid waste management (SWM) poses a major challenge for almost all municipal bodies. Most urban local bodies (ULBs) are not able to collect all the waste generated in the city. Only a fraction of the waste collected is properly disposed. This poses risks to human health and the environment. With rapid economic development and related urbanization the situation is only deteriorating progressively.

ULBs in India have conventionally been more concerned with 'sanitation' aspects. Approaches to SWM have traditionally involved solutions that were centralized, with little concern for prevalent social and informal mechanisms. Efforts to use imported technologies have failed as the needs of country and the character of Indian solid waste is quite different from that of the developed world.

Attempts at outsourcing and private sector participation in waste management have shown promising results but in the absence of an integrated approach to managing the waste cycle from 'beginning to end' municipal bodies have not been able to deliver clean cities. Over the past ten years, private sector operating in the field of solid waste has developed substantial capacity to face the challenge of increasing demand for waste management services.

In order to comply with Municipal Solid Waste Rules 2000 and to overcome various internal constraints, ULBs in many cities have resorted to outsourcing of SWM services. These outsourced service modules can be broadly classified as:

- activity outsourcing which includes door to door garbage collection, transportation of municipal solid waste (MSW), and sweeping of roads; or
- area based outsourcing which may be for a limited part of the city or the entire city.

MODELS IN VOGUE UNDER PPP

ULBs have realized that efficient and effective SWM can be achieved only with private sector participation. From the financial resource allocation point of view, various SWM models can be categorized as those that are:

- Supported by external funding.
- Fully funded by ULBs.
- Funded by user charges.
- Funded through capital investment by service provider or ULB along with a cost sharing arrangement between the ULB and the community.
- Funded through capital investment by ULB and cost sharing by ULB and community for SWM.

SWM THROUGH EXTERNAL FUNDING SUPPORT

Bilateral and external funding agencies support some of the SWM projects in India. These are mostly pilot projects to initiate community action with greater emphasis on soft-activities such as awareness, capacity building, documentation and so on. These pilots were run in cities like Chennai, Bangalore, and Delhi. These were fully supported by funding agencies and were executed by NGOs. There was no involvement of the public sector. All these were very costly interventions as emphasis was more on awareness and capacity building. Such interventions cannot be replicated or scaled up. Projects were supported by Norwegian Aid for Development, Japanese Investment Cooperation Agency (JICA), USAID and so on. Significant consequences of such projects are the enhanced community sensitivity and awareness in waste handling matters as also the proactive action initiated by ULBs.

SWM FULLY SUPPORTED BY URBAN LOCAL BODY

Conventionally ULBs invite bids for undertaking various listed activities and award the contract to the private operator based on the lowest bid. The private contractor assumes almost negligible commercial risk. The operator gets paid for the work done like in any other civil contract. The waste producer is not required to pay any user charges. Thus, any extra cost due to increased level and quality of services is borne by the ULB. Profit margins and hidden costs add financial burden on the ULB and finally on the taxpayer. This kind of model is practised by ULBs in Surat, Delhi, Chennai, Mumbai, and many other municipal bodies.

Such models are not only costly but unsustainable. As the private operator has no financial risks and the community is not paying user charges, such models have a tendency to become like any other government contract where the public at large remains a silent spectator to whatever is delivered and have little say in quality of services.

Once waste producers do not contribute directly, they are neither bothered about quality of services and scientific methods which can be used for waste handling nor are they concerned with waste segregation. The user may not be paying directly but ultimately they end up paying in some form or the other to the government. At times political compulsions guide the decision-making. Elected representatives at the helm of affairs are often shy of taking tough decisions especially when it comes to improving tax collection or levying service charges. It is worth mentioning that while ULBs are primarily responsible for handling waste during its journey from the community bin to the landfill site, the door to door collection and transportation to the municipal waste bin has been traditionally handled by the community of sweepers who charge the waste producers. Municipal Corporations like Surat are providing additional services of door to door waste collection at their own cost. ULBs now are not very keen to adopt this model due to enhanced financial burden.

SWM FULLY FINANCED THROUGH USER CHARGES

In such models, ULBs fix user tariffs and assign responsibility to an agency for undertaking operations. The success of this model depends on back-up support provided by ULBs in terms of enforcing the suitable Act and by-laws to punish offenders. Another requirement of this model is a long term contract or licence to operate.

These interventions are practiced by smaller cities like Gandhinagar or Shimla. Earlier these models were practiced for door-to-door garbage collection only but now cities like Shimla are practising the same for the entire SWM process.

In Gandhinagar, Gujarat this model was tried for door-to-door garbage collection. It did not produce the desired results as most of the consumers were public officials reluctant to pay user charges. The ULB was not able to take any action against offenders for obvious reasons. The model is working well in Shimla as the ULB is taking stringent action against defaulters in line with the orders of the Hon'ble High Court. In Shimla the ULB changed by-regulations to include disconnection of water supply and electricity services in case of non-payment of user charges which was a very effective deterrent.

These models can work for small cities as the areas are limited and the city is more manageable in terms of enforcement of rules. Private operators are not willing to come forward in large cities as risks involved are comparatively high. A possibility of ensuring the success of this model lies in developing strong forward linkages wherein all recyclable and biodegradable waste is purchased and used by the industry.

CAPITAL INVESTMENT BY SERVICE PROVIDER AND COST SHARING BY ULB AND COMMUNITY FOR SWM

In such models (which can be truly termed PPP models), the operator creates the infrastructure and is also responsible for operations and maintenance. The community contributes user-charges towards additional services such as door-to-door garbage collection. Remaining cost of operations is borne by the ULB. SWM operations are labour and capital intensive. Thus they call for long term concession agreements. ULBs which were earlier shy of entering any long term arrangement are now prepared to have long term partnerships with private sector. A major threat to this model comes from changes in the policies of ULB due to political compulsions.

Currently these models are practised by cities of Raipur, Jaipur, Bangalore and so on. Jaipur has a three-year concession agreement whereas Bangalore had five-year agreements until recently when it changed its policies with creation of Brihuta Bangalore Mahanagar Palike (Greater Bangalore Metropolitan Corporation) to one year term of agreement. Serious bidders hardly participate in such bids as there is no certainty of getting the contract in future. The community also is not benefited by frequent changes in operators.

CAPITAL INVESTMENT BY ULB AND COST SHARING BY ULB AND COMMUNITY FOR SWM

This is a comparatively new variation in PPPs in SWM. In this model, the ULB offers all the available resources in terms of plant, machinery, and equipment to the private operator. The private operator may be required

to make investments in low-end equipment. In this way the ULB saves its assets from being converted to scrap due to non usage.

This model is basically devised to involve civil society and other professional organizations which have vast experience of community mobilization and managing change but have low financial resources. Effective SWM can only be achieved with active involvement of the community. The tenets of reduce–recycle–reuse entail close cooperation with the community to manage change. SWM to be effective must also take into account the large informal work force involved in waste management.

At present, this model is practised in Nagpur, Gwalior, and parts of Hyderabad. Agencies with expertise in social action usually lack capital assets which the ULB can make good. Since the stakeholders in the model have financial stakes in the intervention, it intensifies the sense of ownership of these activities. It has been observed that these interventions are most economical and are sustainable.

Monitoring of the process can be achieved at various levels. In a recent adaptation of this model the ULB of Daman & Diu has even offered its manpower to the private operator. In earlier versions, ULBs usually saved their human resources for contingencies and also for deployment activities other than SWM. The Daman and Diu version has minimized the direct burden on the administration as the private agency is empowered to take action against SWM workers in case of non-performance.

COST IMPLICATIONS

With the passage of time the cost of services has generally risen as has the level of expectations of the aware consumer regarding the quality of service. However in the SWM sector, despite enhancement of service quality indicators and escalation in wages and fuel costs, the prices quoted by the private sector operators have demonstrated a downward trend.

CHENNAI

Corporation of Chennai (CoC) is among the earliest ULBs in the country to outsource SWM interventions. It is the only ULB that has benefited from interventions by MNCs. In year 2000, CES-ONYX (now Veolia) was awarded the SWM contract at the rate of Rs 760 per metric tonne (MT) of MSW for seven years with 5 per cent escalation per annum. The contract terminated on 23 August 2007 at the rate of Rs 1300 per MT. The last contract included sweeping, transportation, and community bin maintenance within the scope of work. CoC has recently awarded a contract to a Columbian MNC, Fanalca

SA at the rate of Rs 642 per MT again for seven years with 5 per cent annual escalation. The present contract also includes door-to-door segregated garbage collection, which in itself is a costly activity. The present bid opened on 20 June 2007; Veolia also submitted bid at the rate of Rs 1050 per MT for the first year.

SURAT

Considered to be one of the cleanest cities in the country, Surat initiated outsourced SWM activities after the city suffered pneumonic plague epidemic in 1994 attributed primarily to poor sanitation facilities in the city. It is the first city in the country to introduce door-to-door garbage collection with closed fabricated hydraulic vehicles. The City Corporation awarded the job of door-to-door garbage collection in two phases—first, in 2003, wherein 3 out of 6 zones of the city were offered for outsourcing. The contract was awarded to three bidders at the rate of Rs 621 per MT for seven years with 5 per cent escalation per annum. In the same city, the same operators took up the same task under the same terms and conditions for Rs 600 per MT in 2006 for the remaining 3 zones of Surat.

DELHI

Similarly, in Delhi, within a few months of the initial bids, the rates quoted by bidders have come down by almost 40 per cent. Usually, transportation and lifting of waste is costlier in less densely populated areas of the city but in the case of Delhi lower quote was received for areas in central Delhi covered under New Delhi Municipal Council. For the same activity in 6 zones of MCD, the minimum rate is Rs 600 per MT whereas for the NDMC area it is Rs 375 per MT. Terms and conditions of the contract are the same.

It is well recognized now that the SWM projects are financially viable and bankable and have been funded in many cities like any other infrastructure project. The financial model where the ULB contributes in terms of high-end capital goods, the private sector operator assumes the commercial risk along with low-end investments, and the ULB and community share the costs of SWM, is likely to be the order of the day. Special purpose vehicles or joint venture companies or consortia of organizations can take up integrated SWM projects that are sustainable and fulfill the basic tenets of SWM that is, reduce, recycle, and reuse.

Efforts have been initiated in the country, for instance, in Gwalior where IL&FS Waste Management and Urban Services Ltd. is collaborating with Centre for Development Communication—an NGO working in the

field of SWM to take up SWM projects. CDC has demonstrated in Nagpur and many other cities that NGOs have the capacity to mobilize the informal sector waste workers in a well organized team that helps them to enhance their earnings. The participatory approach of NGOs and their managerial skills help not only in reduction in the cost of services but also in developing awareness within the community towards efficient waste segregation at the source. NGOs are more adept at bringing change at the community level. Such capabilities, when

combined with financial strengths and project management skills of financial institutions, can deliver professional urban environmental services at affordable costs.

This paper has outlined five financial models that are being used in Indian cities. We strongly believe that community participation and involvement of the informal refuse collectors, sweepers, and the scavengers is essential for efficient and effective SWM, which can help in generating income for the poor and creating wealth for the cities.

7.4

Delfland Waste Water Treatment Model

Anupam Rastogi and Shreemoyee Patra

Water and wastewater issues in the Netherlands have always remained within the precinct of its Municipal Corporation. The Delfland Waste Water Treatment Project (DWWTP), which was conceived of and implemented at the behest of the Netherlands Municipal Corporation, was the first Design, Build, Finance, Operate (DBFO) wastewater project to reach financial closure in the Netherlands. The inventive process of procurement and ingenious financial planning that mark this endeavour make it an important chapter in the history of PPP in the European infrastructure sector.

The DWWTP, at a total investment of over Euro 400 million, is expected to handle the wastewater processing needs of 1.7 million inhabitants of Hague and surrounding areas spread over approximately 25 ha of land.

INNOVATIVE FEATURES OF THE MODEL

The concession has been designed with particular care to ensure that while public funds are optimally utilized, the private player engaged in the project is also able to earn sufficient profits. A few of the unique features that marked the concessioning process have been highlighted below:

- a. The competitive bidding process when tenders were invited was extremely rigorous.
- b. Each bidder had to compulsorily submit two kinds of funding options, both bank debt as well as bond financing.
- c. It was the prerogative of the municipality to choose the funding option that was most suited to its long and short term interests.

- d. Given that the municipality could cover interest rate risks using hedging derivative products, it was possible to pass on the risk of interest rate fluctuations to the municipality at the preliminary stage.
- e. The private sector bore the full burden of the construction risk.
- f. Post-construction leasing schemes were designed for incorporation into the concession at the behest of the project developer. The idea was to enhance the financial attractiveness of the project and partially cushion the initial construction risk carried by the developer.

AWARD OF THE CONCESSION

The technical consultant on the project was the East of Scotland Water (now Scottish Water) while Pricewaterhouse Coopers (PWC) was engaged for handling all aspects related to financial, commercial, and contractual issues. Both these companies had contributed successfully to other waste water treatment BOT projects undertaken in Scotland during the 1990s. Stibbe and Herbert Smith provided legal advice.

The Delfluent Consortium emerged the winner at the end of a stringent bidding process in which three leading consortia of bidders participated. PWC assessed the financing options offered by Delfluent and concluded that the bank funding option was more favourable than the bond funding option. The bank funding option also had the requisite flexibility to make room for the leasing schemes mentioned earlier. As soon as Delfluent Consortium was declared the preferred bidder, it was given a time period of fourteen months to achieve financial closure along with

the structuring and settling of terms and conditions with the funding entities.

ADVANTAGES FOR THE MUNICIPALITY WITHIN SUCH A MODEL

The most unique feature of this concession was that the municipality could exercise choice in the matter of financing routes. This made the private player's financing approach an open and transparent strategy which could bear the direct scrutiny of the client. This made the decision-making process a more credible one. Given that multiple funding options were still under consideration even when the concessionaire had already been selected, sustained competition between the two financing sources over the 14 months during which financial closure was being negotiated ultimately minimized project costs and increased value for public money. The municipality remained in a position to monitor, control, and determine the course of financing decisions in a way that would bring in best value for the money it was about to spend.

In the critical period of fourteen months mentioned, the burden of rising interest cost was shifted to the municipality by commensurate increases in the agreed tariff. The municipality could safeguard against the incremental demand on its pocket by means of derivative hedging contracts.¹

During the construction period, the interest rate plummeted in the initial six to eight months resulting

in significant improvements in the net present value (NPV) of the project. By the time the interest rate began to climb up again, the municipality had largely protected itself against the undesirable consequences of interest rate increase by entering into a series of well strategized hedging contracts.

The floating interest rate mismatches between the European Inter Bank Lending Rate (EURIBOR) and the lending rate of the European Investment Bank (EIB) were mitigated by accommodating a hedge against the Euro 125 million facility advanced by EIB through an innovative financial mechanism. When financial closure on the project was achieved, the hedging contracts were introduced to the concessionaire in December 2003. The rates, in the meanwhile, continued to rise and the municipality was able to generate substantial NPV savings. The project, on completion, achieved an NPV of 15 per cent which was well in excess of the planned NPV of 10 per cent.

The prospect of leasing schemes that was inherent in the concession, armed the project with greater potential, both in terms of revenue generation possibilities as well as means to cutback on costs. This was advantageous for both the concessionaire as well as the client.

The Delfland project clearly allocated risks of increase in rate of interest with the municipality while construction risk lay fully with the project developer. The working and the funding mechanism of this project is now being successfully applied to other projects across Europe.

7.5

A PPP Model for Medical Education and Tertiary Healthcare

Partha Mukhopadhyay

The government is in the process of expanding health care access. A part of the expansion will involve the establishment of facilities offering specialty and super-specialty care like major teaching hospitals,² proposed institutes modeled on the All India Institute of Medical

Sciences (AIIMS), and tertiary care facilities like ESI hospitals.

The AIIMS-type institutes will focus on providing the highest quality *patient care services*, that is, diagnostic and therapeutic care with state-of-the-art high-tech medical

¹ A hedging interest derivative is a financial instrument which can be used to protect against the risk of rising interest rates, by entering into various hedging contracts with banks and financial institutions. This meant that the municipality could protect itself in advance against the risk of rising interest cost during the first fourteen months by means of hedging derivatives.

² Increase in the capacity of medical education is also required to meet the government's commitment to expand access to medical and technical education to socially and educationally backward castes.

equipment in clearly identified specialty and super specialty services. They will also offer undergraduate and postgraduate medical education at international levels of quality and efficiency and undertake both basic and applied biomedical research.

To establish these institutions, an earlier proposal of the government envisaged the appointment of project management consultants (PMC) to select an architectural design, prepare the project report, including detailed designs and drawings and to select a project implementation agency to supervise construction and manage the overall project. The PMC would be directly responsible for proper completion, commissioning, and handing over of the project.

We propose an alternative approach, using public-private partnership (PPP) that has the potential of using these facilities much more efficiently and providing better service to the people, especially the poor.

CRITICAL EVALUATION OF PPP IN HEALTHCARE

While public health has traditionally been delivered by the state sector, there are now many innovative initiatives to partner with the private sector in health care. Though not widely known, many countries have used PPP to deliver inpatient care, preventive care, and health awareness programmes. The key reasons for inviting private participation in this area are:

1. It improves service delivery by incentivizing service providers in a manner that is difficult to achieve under public sector management. The key benefit is, thus, higher efficiency arising from accountability.
2. It reduces the requirement for public funds by increasing the efficiency of revenue generation from an appropriate set of activities and from an appropriate target group. This eases up government resources for alternative uses or for expansion of effective health services to newer areas with improved service levels.³

The following sections briefly describe the international and Indian experience with PPP in health care.

³ The reduction in the government's liabilities is based on the assumption that the payments made to the service provider are less than the cost of servicing an equivalent amount of debt and the operational costs of the facility.

⁴ Speaking about the contract, the Karnataka Health Minister stated in the State Assembly that the state government had entered into an understanding with the private provider only after hi-tech hospitals of several states proved to be non-starters. He said that the tie-up was decided only after the efforts of the government to manage the hospital did not yield expected results. See 'Govt. draws flak over OPEC hospital' in *The Hindu*, January 23, 2002 (<http://www.hinduonnet.com/thehindu/2002/01/23/stories/2002012303160300.htm>).

⁵ The local administration decides who is eligible.

INTERNATIONAL EXPERIENCE

Among the better known examples of the use of PPP in health care is that of United Kingdom, where the private sector constructs and maintains a health facility, i.e., ensures that the building is well-maintained and that the necessary prerequisites like maintenance of the ward, electricity, plumbing, hygiene, and so on, for ensuring that the beds are available for patients, are complied with. They also provide non-clinical services such as laundry, security, parking, catering, on a pre-decided periodic payment. The payment to the private partner is often called an availability fee, since it is contingent on various facilities being kept available. This is distinct from a user fee, where the private partner would be compensated only if the facilities were used so that the payment would be for beds occupied rather than beds available. In the UK, the public sector provides all the clinical services.

In many other working models however, the private sector also provides clinical services. States such as Victoria in Australia have awarded contracts for designing, building, and operating a public hospital in return for payments based on forecast mix of patients. Some public hospitals in Australia also share facilities with co-located private hospitals, thereby reducing the overall cost to the public health system. Brazil has used a similar system of using a forecast mix of patients for awarding annual management contracts of publicly built hospitals (which may be too short-term for any real benefit). Examples of private participation in health service delivery can be found in other countries too, such as Sweden, South Africa, and Cambodia.

INDIAN EXPERIENCE

Examples of PPP in hospitals can be found here at home too. One of them is the Rajiv Gandhi Super-specialty Hospital at Raichur in Karnataka (RGSH).⁴ The state government, which built the hospital with external assistance, was unable to staff it properly and finally entered into a ten-year management contract with the Apollo group.

The contract provides that 140 out of 350 beds will be set aside as a general ward and made available to poor patients⁵ with the further stipulation that no poor patient will be turned away on the sole ground that all general

ward beds are occupied, that is, the patient would have to be admitted if beds are available in the special ward (for fee-paying patients). In addition to providing the hospital, the state government pays for the consumables used in treating the poor patients and agrees to meet any operating losses in the initial three years. In return it receives 70 per cent of the operating profits.

Another example is that of the Sikkim Manipal University of Health, Medical, and Technological Sciences (SMUHMTS) in Gangtok, a teaching facility that includes a Central Referral Hospital. Here the state government provides support through a fixed annual fee of Rs 50,000 per bed for the hospital. The project also benefits from occasional ad-hoc grants from bodies such as the North East Council. The hospital is operated on a non-profit basis, while the University is a commercial proposition, an arrangement that could be thought of as a cross-subsidy from professional education to acute health care.

There is, therefore, a body of international and domestic experience with private participation in hospitals that can be drawn upon to structure a PPP model for health

care. However, there is perhaps as much to emulate from the successful implementations of PPP as to avoid from the not-so-successful cases.⁶

MAPPING AN APEX HEALTH CARE INSTITUTE

Before designing a PPP approach to health care, especially a large tertiary care hospital and/or a teaching facility, it is important to first understand the nature of such an institution.

Establishing and running an apex health care institute entails the establishment and simultaneous functioning of a number of modules of diverse but related activities. Table 7.5.1 shows various general groupings of activity at an apex health care institute (such as AIIMS) by increasing order of criticality with respect to patient care, that is, level 1 being the least critical and level 7 being the most critical.⁷ Table 7.5.1 also outlines various combinations of PPP as implemented in different countries. The items in italics have the potential of generating user fees from patients and their relatives.

TABLE 7.5.1
Various Options for Private Participation in AIIMS-like APEX Health Care Facility

Level	Description of Activity	Examples
1	a Construction of the hospital complex (both general and referral)	In United Kingdom, private sector constructs and maintains the facility and provides non-clinical services such as laundry, security, parking, catering etc. on a pre-decided annual payment. The public sector provides all the clinical services.
1	b Maintenance of the hospital complex (both general and referral)	
1	c Information Technology services (both general and referral hospitals)	
1	d <i>Provision of non-clinical support services, guest services, i.e. visitor accommodation, catering services, ambulance services (transport only), etc.</i>	
2	Delivery of preventive services and health awareness	In Kenya, Philippines, and Pakistan, private franchisees provide maternity, child and reproductive health services. In Bangladesh, non-government organizations promote use of oral re-hydration therapy.
3	a Maintenance of invasive clinical support facilities such as surgical wards	In Australia, co-located commercially run private hospitals share facilities with public hospitals
3	b Nursing services, physiotherapy, and paramedical services etc.	
4	a <i>Handling of outpatient care, dispensing services, medical consultant services</i>	In Australia, (15-20 years) and Brazil (annual), management contracts have payments based on forecast level and case mix of patients, on a price and volume basis in Sweden. In Cambodia, fees are paid on a per patient basis for district health care centers. In Karnataka, fees is based on profit sharing (see text).
4	b <i>Non-invasive clinical investigations, such as pathology, X-ray, ECG, MRI and other similar services</i>	
4	c <i>Indoor care of non-referral patients including surgical procedures</i>	
5	<i>Indoor care of referral patients</i>	In Sikkim, a referral hospital within a private university receives a fixed annual fee per bed and other grants from the North Eastern Council. The University revenues cross-subsidize the hospital.
6	<i>Medical education facilities</i>	
7	<i>Research</i>	

⁶ Both RGSB and SMUHMTS have critics who contend that the private sector has not fulfilled its obligations. Similarly, Australia too has examples of both success (Mildura) and failure (La Trobe).

⁷ Medical research and education are considered more critical because of their potentially widespread effects. Inadequately trained doctors in the health care system can cause significant damage.

KEY COMPONENTS OF AN APEX HEALTH CARE INSTITUTE

Based on the different modules comprising an apex health care institute, it is possible to decompose its operations into two broad activities, namely: a General Hospital comprising activities from Level 1 to 4 and an Institute that is responsible for specialty and super specialty care, teaching, and research, that is, activities at Levels 5 to 7.

The Institute will not have the daily pressure of dealing with numerous patients. Concomitantly, issues of patient and facility management, where the private sector has a comparative advantage, will become less significant for the Institute.

PPP OPTIONS AT VARIOUS LEVELS OF THE APEX HEALTH CARE CENTRE

For activities related to the General Hospital, the UK model contracts out Levels 1a, 1b, and 1c to a single contractor for a fixed annual fee. Many hospitals also independently contract out IT services (Level 1c). Activities till Level 1c do not involve the delivery of clinical functions and cannot be delivered on a user fee basis (collected from the hospital user) and thus the contract is thus usually on a pay-for-performance basis. The integration of construction and maintenance in the contract provides strong incentive for the contractor to ensure construction quality, to avoid excessive maintenance costs in the future.⁸

While most Level 1d activities are also cost items, there are some revenue generating activities like visitor accommodation and guest catering. Once the revenues from Level 1d are available, there are a number of contracting possibilities for a bundled Level 1 contract: (a) a fixed annual fee, where the private contractor takes the revenue risk from user fee based ancillary services, (b) the private contractor provides the services for a fixed fee for service and the revenue is collected by the hospital, that is, the public sector bears the revenue risk or (c) contracting on a revenue or profit sharing basis. Here the involvement of the private sector is likely to result in a greater variety of price-value combinations for activities such as visitor accommodation, guest catering, and so on which is likely to result in higher revenue as compared to public sector delivery.

However, while visitor accommodation and guest catering can be bundled along with other Level 1 services; they can also be candidates for a separate PPP contract due to the specialized nature of such services.

PPP in Level 2 activities, for instance, through social marketing and franchising can improve the effectiveness of message delivery and bring about faster adoption of preventive health care practices in the target population. Some would argue that the substantial requirement for communication and community intervention skills makes such activities quite distinct from managing a hospital and therefore, Level 2 activities are also candidates for separate PPP contracts. One example of this is the spread of awareness about Oral Rehydration Therapy

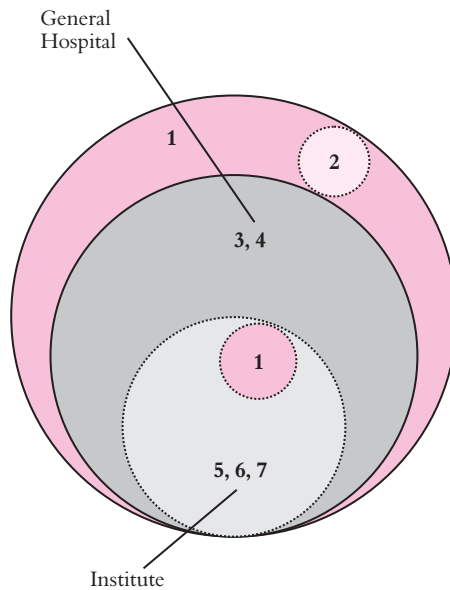


FIGURE 7.5.1: Proposed Structure of Activities

⁸ This assumes that the contractor would find it difficult to renegotiate the contract in the future in case maintenance costs turned out to be excessive because of initial problems with construction.

(ORT) in Bangladesh by BRAC, a large local NGO.⁹ The performance measurement of the effectiveness of such initiatives would need to be done through carefully structured surveys.

Level 3 activities are similar to Level 1 activities in structure and can be handled in much the same way, except for the fact that it is difficult to develop performance metrics for them. It is, therefore, advisable to bundle them along with other clinical services in Level 4. Here, PPP in Level 4 activities can potentially increase revenue generation by better marketing and appropriate targeting of user fees by patient segments.

However, structuring an appropriate payment mechanism becomes difficult. Often, the forecast case-mix approach is difficult to implement due to lack of good data. Besides, the transfer of risk to the private sector that is by definition not within its control may not also be advisable. The approach adopted in the case of RGSB may be an effective *via media*.

PPP for the activities of the Institute is more difficult to structure. While professional medical education can be and is being privately provided, full cost recovery of undergraduate and postgraduate medical *education* with international levels of quality and efficiency may be difficult. It is also difficult to measure the quality of delivery in higher education. Similar issues hold for basic research, though there are significant possibilities of collaboration with the pharmaceutical industry. For the moment, it could be left in the public sector.¹⁰ However, for the successful delivery of medical education, the students, and indeed the teachers/doctors, would need to have access to the General Hospital.

PROPOSED STRUCTURE

Based on the above, the following structure is proposed (see Figure 7.5.1 and Table 7.5.1):

1. The apex health care facility will comprise two units, a General Hospital providing a full range of inpatient care, shown by the dark grey area in Figure 7.5.1 and an Institute, comprising a referral hospital, a medical university, and research centre which will be co-located at the same site (represented by the light grey area in Figure 7.5.1).
2. Activities at Level 1, 3 and 4 (that is, the building, maintenance and operation of the General Hospital)

⁹ See Chowdhury (2001).

¹⁰ The relative levels of improvement in efficiency through private involvement in these activities, that is, referral care, research and teaching may be lower than in the activities related to the General Hospital.

¹¹ The experience of the Rogi Kalyan Samiti in Madhya Pradesh suggests that voluntary nominal fees rather than totally free care are acceptable to all patients. Given the volume at public hospitals, even nominal fees generate substantial revenue compared to the expenditure on maintenance and consumables.

are to be undertaken by a private concessionaire under a long-term (say 15 to 20 years) concession. A certain portion of the bed capacity of the General Hospital is to be earmarked for the use of patients with a regulated fee (which could be zero).¹¹ Similarly, medical consultation and diagnostic facilities will be available at a regulated fee to poor patients.

3. Activities at Level 2, that is, outreach activities relating to health awareness and preventive care in a defined geographical region around the apex facility (shown in Figure 7.5.1 as a dotted circle) can be bundled along with the contract for the General Hospital or awarded as a separate contract. The option chosen would have a bearing on the nature of pre-qualification requirements for bidders.
4. The remaining portion of the bed capacity of the General Hospital and activities such as medical consultation and diagnostic facilities can be used on a commercial basis by the private concessionaire. The fees for such use will not be regulated, except under general laws of fair competition but, as in the RGSB contract in Karnataka, no poor patient will be refused admission if all earmarked beds are occupied but 'commercial' beds remain available.

These commercial revenues of the General Hospital, in addition to other user pay Level 1 activities such as visitor accommodation and guest catering (unless these are awarded as a separate PPP contract), may provide a sufficient revenue stream for the private concessionaire in some locations. However, in other locations, this alone may not be sufficient for commercial viability and may need to be supplemented by an availability fee for the bed capacity earmarked for patients charged a regulated fee. This fee would be paid periodically subject to meeting of performance parameters.

Even if the user pay Level 1 activities are separately awarded to another concessionaire, the concession fee revenues from the visitor accommodation and guest catering can be used to meet part or all of these supplemental payments to the General Hospital by ensuring that those revenues flow through an escrow account. This will provide greater comfort to the General Hospital concessionaire since the entire supplemental fee would not be dependent on budgetary support from the government but will actually be generated by an activity whose success is co-related to the success of the hospital.

5. The Institute will share its diagnostic and other facilities with the General Hospital as required and vice versa; a benefit of co-location. The fees for such services will depend on whether the patient is poor or otherwise.
6. The General Hospital will be required to provide necessary assistance for the training needs of the medical students of the Institute, including internships, as required.
7. The public sector will undertake activities at Levels 5, 6 and 7 at the Institute. However, the concessionaire responsible for the General Hospital will build and manage the buildings and provide IT services and non-clinical services (Levels 1a, 1b and 1c) for the Institute. This is graphically represented in Figure 7.5.1 by the dark grey dotted circle inside the light grey area.
8. The Institute will charge regulated fees for its services, which can depend on the income and insurance coverage of the patient. All insured and non-poor patients will be charged a commercial fee for such services.
9. The Institute will charge commercial fees for its medical education, but arrangements will be put in place to ensure that no student is deprived of education at the Institute for lack of financial resources.
10. The Institute can also enter into research contracts with for-profit organizations at mutually agreed commercial terms.

The Institute will be allowed to retain such earnings from its referral care, education, and research contracts. This will accumulate in a corpus to be used for the benefit of the Institute.

GENERAL HOSPITAL

Table 7.5.2 sets out indicative milestones and timelines for the process of selecting a private concessionaire for the General Hospital under a Build, Operate, Manage, and Transfer (BOMT) contract. This is compared with the best case scenario for procuring such a hospital through traditional methods. As can be seen, the PPP process is expected to lead to faster delivery, as has been seen in other sectors. However, the real benefits of PPP come not just from faster completion but from the continued efficiency and improvement in service delivery over time.

SELECTION PROCESS

The final evaluation of proposals (step 8 in Table 7.5.2) will be through a two-step process, viz.

- a) Pre-qualification of bidders, based on their *design* for the apex health care facility and their demonstrated delivery capability in relevant service areas. This pre-qualification would be on a pass–fail basis.
- b) A financial bid, based on a fixed fee per bed.¹² This will permit the total support to vary if the capacity is changed over the life of the contract. The bidder with the lowest financial bid would be the preferred bidder. *It may be noted that the residual revenue risk remains with the private party.*

MONITORING OF RESPONSIBILITIES

There are three main areas of concern with respect to adherence to contract provisions by the private provider responsible for the General Hospital, viz.

- a. Denial of service,
- b. Quality of service, and
- c. Price of service.

Monitoring of these aspects requires local information and prompt remedial action. It also requires knowledge of health care practices and prevailing conditions at the General Hospital at a given point in time. Therefore, a competent local body appears to be best suited for the purpose. One such model could be a *Rogi Kalyan Samiti (RKS)*, with representation from medical professionals, local citizenry, and possibly the Ministry of Health and Family Welfare. The management of the Institute, as distinct from the General Hospital, can be members of this body. Aggrieved persons will thus have immediate local recourse. The presence of Institute staff will contribute the required medical expertise as well as knowledge of ground conditions at the General Hospital. The RKS would follow an open consultative process in arriving at its decisions.

BENEFITS OF THE PROPOSED STRUCTURE

Apart from the general gains from PPP, there are three that are specific to the context, viz: *speed, focus, and resource generation.*

1. Speed

As shown in Table 7.5.2, even compared to a very efficient delivery schedule for the traditional method, a PPP mode will enable the General Hospital to be operational much faster, expectedly within a three year time frame, and the Institute to be functional in an additional six months from

¹² The number of beds can either be the total bed capacity or the bed capacity earmarked for poor patients.

TABLE 7.5.2
Comparative Timelines for Completion of Project

PPP PROCESS		TRADITIONAL PROCESS	
Month	Activity	Month	Activity
0	1. Request for proposals for Project Management Contract	0	Request for proposals for Project Management Contract
2	2. Submission of proposals for Project Management Contract	2	Submission of proposals for Project Management Contract
4	3. Award of Project Management Contract	4	1. Award of Project Management Contract
5	4. Expression of Interest (EoI) for Build, Operate, Manage and Transfer (BOMT) contract	5	2. EoI for design of hospital
6	5. Submission of EoI for BOMT contract	6	3. Submission of design EoI
12	6. Request for proposals for BOMT contract ¹³	8	4. Request for proposals for design of hospital
15	7. Submission of proposals for BOMT contract	10	5. Submission of design proposal
16	8. Award of BOMT contract	12	6. Award of design contract ¹⁴
		13	7. EoI for Civil Works construction
		14	8. Submission of EoI for Civil Works
		15	9. RfP for Civil Works construction
		17	10. Submission of proposal for Civil Works construction
		18	11. Award of Civil Works contract
36	9. General Hospitals is operational ¹⁵	43	12. Delivery of near-ready facility
41	10. Delivery of fully equipped Institute	47	13. Completion of equipment installation ¹⁶ and associated works
42	11. Institute becomes operational	48	14. Apex Healthcare Institute becomes operational

the date that the request for proposals for PMCs is issued. While the proposed PPP route takes about four months longer for awarding the BOMT concession, given the need to draft the documents carefully and consultatively, it saves six months by avoiding the procurement process for civil works and another four months for equipment installation and subsequent civil works.

2. Focus on Education and Research

A critical function of the proposed apex health care institute (similar to AIIMS) is to provide international quality medical education and undertake high quality research. The effectiveness with which this function is executed is affected if the hospital management has to concern itself with the administrative and clinical functioning of a large general public hospital at the same time. Indeed, this is an ongoing problem at AIIMS. The proposed

model brings together the best of both worlds. It separates the day-to-day management of the General Hospital from the Institute, thereby providing a more conducive environment for referral treatment, teaching, and research. At the same time, since the General Hospital is co-located with the Institute, the benefits of on-the-job training in a teaching hospital remain fully available to the students.

3. Generation of Resources

The commercial part of the hospital will generate resources that will defray the costs of running the non-commercial activities. The increased revenue generation can help to increase the level of patient care for all patients, thereby providing poor patients with a level of care that is currently available only to those that can afford more expensive medical care facilities. Furthermore, if the

¹³ This assumes that the development of the concession contract will take eight months from the date of award of the PMC contract to the issue of RfP for BOM contract. The intervening three-month period before bid submission can be used to further refine the contract based on feedback from pre-qualified bidders.

¹⁴ Evaluation of a design proposal is likely to take more time since there is a significant subjective element to the process and hence an extra month is assumed for this purpose.

¹⁵ The time frame of twenty months for a working General Hospital is based on the experience of Mildura hospital in Australia, executed by Ramsay Healthcare, where time from start of construction to operational commissioning was 18 months. See <http://www.Infraproj.com/mildura/pdf>. Note that under both options, the civil works component for the full complex takes twenty-five months.

¹⁶ This assumes that the procurement process for equipment is conducted and completed while the civil works are being executed, thereby reducing the set-up time.

government permits the medical professionals at the Institute to consult at the co-located General Hospital at commercial rates, the best talent need not make a major financial sacrifice in order to be associated with the Institute.

There will also be additional resources generated from savings of government expenditure, compared to the ongoing running cost of a public hospital. Unfortunately, while many public hospitals begin well, sustaining a standard of maintenance and care becomes difficult in the government delivery system. The PPP arrangement contractually assures the maintenance of the facility and delivery of quality general health care services by the

private concessionaire, who is liable for strict penalties in case of non-performance.

CONCLUSION

This paper has argued that public-private partnership (PPP) has the potential of providing tertiary health care and medical education facilities much more efficiently than the traditional mode with better service to the people, especially the poor. Commissioning an apex health care facility in a PPP mode will help complete the project faster and ensure better and more cost-effective service delivery during the operational phase.

7.6

The Byrraju Foundation's PPP Model for Village Primary Health Care Centres

D.S. Ratna Devi and K. Rama Raju

Byrraju Foundation, a not-for-profit organization, aims to create a world-class platform for sustainable rural transformation. The Foundation aims to effect quantum changes in all aspects of rural life in a short period of time with the belief that for it to be sustainable, the process has to be owned, managed, and led by the community.

The Foundation derives its strength from its ability to inspire community leadership by mobilizing motivated individuals to form Grama Vikas Samithis (GVSs). All the GVS members, working on voluntary basis, are called change agents. Each GVS has eighteen members, nine on the immediate board and nine for support; each member looks after one or more areas of the services provided by the Foundation. For every six to seven villages, there is a nodal coordinator, who is an employee of the Foundation. The nodal coordinator assists GVS members in implementing the Foundation's initiatives. Every village has a Rural Health centre, co-funded and built by the villagers.

The overall objective of the health care programme is to improve access to primary health care, provide necessary knowledge, and awareness about communicable and non-communicable diseases to the villagers and enable them to manage their health more effectively. At present, a total of 180 rural health centres have been initiated in 180 villages in six programme districts and run

with a part time doctor and a full time Auxiliary Nurse Midwife (ANM).

The programme is delivered through a collaborative framework, in which the Foundation actively partners with the Government, Alliance Partners, independent NGOs, and the Village Community. The focus of these partnerships is to pool together the best practices and use the strengths of each partner for better reach and access to all rural populations in diverse areas such as awareness generation, technology transfer, diagnostic and curative services, risk screening, and secondary care.

THE APPROACH

In all the villages, first a baseline study is conducted to understand the existing health care facilities as well as the awareness levels of the community it proposes to serve. The village elders, opinion makers, and GVS members are consulted for the needs of the village, the proximity to the nearest government facility, availability of doctors and so on. Once the villagers agree that health is a major concern that needs immediate address, a space is identified for establishing the Health Care Centre and a doctor and an ANM designated as Village Coordinator (VCO) are recruited. The ANM undergoes a fifteen-day orientation and induction training in the Foundation as well as on-the-

job training in the field. The Foundation provides the medicines for primary care on a nominal user fee model.

It takes about a month to establish primary care services and have the unit functional after which a house to house visit is undertaken by the VCO for risk screening for diseases like diabetes, hypertension and cancer, identification and listing for epilepsy, disability, eye care, maternal and child health, and nutritional deficiencies. Linkages are established with the Anganwadi worker and the PHC ANM for service delivery for maternal and child health in collaboration with the government systems. The VCO assists the government ANM in identifying ANC and children who have missed their immunization doses and checkups and brings them to the next session. The doctor provides free ANC checkups and advice for the Anganwadi children.

The risk screening for diabetes using the risk score (BMI, family history, lifestyle, and waist size) yields a lot of people with a propensity for diabetes. These people are called to the Health Center for a free fasting glucose checkup and a consultation with the doctor. Of these, people who have fasting glucose levels confirming diabetes are given counseling for diet and lifestyle changes and initiated on treatment. Regular follow up visits are undertaken by the VCO to ensure compliance and motivate the patients to adopt healthy food habits and regular exercise. Similarly patients who measure high for blood pressure are initiated on treatment for hypertension.

The Foundation also has a wide spread School Health Programme. All children enrolled in the schools are provided health checkup by the Foundation doctor and are provided free treatment for common ailments. Those needing referral services for eyecare, dental care, heart and other problems are provided services by linking up with tertiary hospitals in the government as well as the private sector.

About 20 per cent of the villagers accessing primary care need referrals for further consultancy or diagnostic services. The Foundation has two way audio video conferencing facility established in thirty-two villages in partnership with NISG and Media Lab Asia. Through active participation of the doctors in ASRAM Hospital, Eluru and Konaseema Institute of Medical Sciences, Amalapuram, and several independent specialists, teleconsulting is offered to these patients so that it not only saves them time but also prevents loss of wages.

Byrraju Foundation is a partner for HIV care and services with AP State AIDS Control Society and strives to facilitate the government's role for raising awareness on HIV, increasing access to counseling and testing services, and providing a collaborative platform for various care and support services. A team has been established for monitoring these activities which the Foundation supports and works actively with the district health teams in the government for better and faster delivery of services.

A model primary health care centre has three rooms and is located centrally in the village and easily accessible

TABLE 7.6.1
Cost of Running a Byrraju Foundation's Village Primary Health Care Centre

		(in Rs)	
S. No.	Particulars of Costs	Per Month	Per Annum
1	Village Health Centre (VHC)		
	Land ¹⁷ —10 Cents @ Rs 40,000 each—Rs 400,000		
	Building ¹⁸ —400 sft @ Rs 1000 each—Rs 400,000		
	Depreciation on building @ 7.5 % Per Annum	2500	30,000
2	Furniture—2 fans, 2 chairs, 2 tables, 1 examination table, 2 fans, 2 chairs		
	2 fans, 2 chairs, 2 tables, 1 examination table, 2 stools for patients		
	BP Apparatus , glucometer , thermometer ,weighing machine etc ¹⁹ —Rs 35,000	583	7000
	Depreciation @ 20 % Per annum		
4	Salaries to doctors	5000	60,000
5	Salaries to nurses	3000	36,000
6	Cost of Medicines Per VHC per annum	2775	33,300
	(Year 2006–7- Rs 5,663,000 for 170 village health centres		
7	Electricity charges	300	3600
8	Telephone charges	200	2400
9	Sweepers salary and consumables for cleaning premises	400	4800
10	Other costs (approximately)	1500	18,000
	Total	16258	195100

¹⁷ Land is generally provided by the community free of cost.

¹⁸ Money is shared between villagers and the Foundation.

¹⁹ These instruments are generally received in donation in kind.

to all localities, it is accessible from a paved (or main) road. The facility has a minimum of three rooms with a toilet and water, electricity, and phone facilities. The facility should essentially be on ground floor less than a meter high from the paved road (at a maximum of five steps high with a grab rail and desirable to have a ramp in addition to these steps), the main doorway should be minimum of 3 ft × 6.25 ft. The equipment, medicines, and personnel are provided by the Foundation, the villager co-pay for the infrastructure and the government is invited to use the facility for service delivery.

The Foundation levies a modest user charge @ Rs 5 for primary care and Rs 10/- for specialized services like hypertension, diabetes, eye care, cancer screening, dental

care, and epilepsy. The cost of running a health center is about Rs 15,000 per month inclusive of doctor's remuneration and medicine costs. About 20 per cent of this is mobilized through user fees; the rest is through resources in cash and kind from philanthropic individuals, institutions, and agencies. The Foundation is now working on a Rural Health Insurance model for making health care even more accessible and affordable to all rural masses. The cost of running a village primary health care centre is only Rs 16,258 per centre (Table 7.6.1). A large part of it is recoverable from the user charges.

In short, the Foundation's health care model is able to provide a comprehensive primary health care facility to all villagers at an affordable price.

7.7

An Inclusive Development Model for Health, Education, and Housing Sectors

P.V. Indiresan

A number of hospitals in India, starting with the Christian Medical College (CMC), Vellore, offer even high-end expensive services, such as cardiac surgeries, free of cost. They can be put forward as good examples of inclusive development. Such successful inclusion of the poor, irrespective of their background and profile, demonstrated by hospitals like CMC, Vellore, Narayana Hridayalaya in Bangalore and Kolkata, L.V. Prasad Eye Institute in Hyderabad (to name a few) provides the basis for devising a more generalized model of inclusive development.

In an interview with Sonali Hegde and Mitra Das (*Bangalorebest.com*), Dr Devi Shetty of Narayana Hridayalaya emphasized the salient philosophy of his inclusive movement:

If I am given a choice I would like to treat only the poor patients. But unfortunately the economic reality will not allow me to do that. So instead what we do is, offer 25 per cent of the beds for the rich people and 75 per cent we leave for the poor. (In the new 5000 bed hospital he is constructing in Kolkata, the proportional allocation is 50–50.)

In this society there are a large number of people who need help but do not know where help will be available. And there are a good number of people with money with the intention to help but don't know who requires it. We do the job of that intermediary. We are the brokers between those who need and those who have.

If we tell a rich patient that we are going to charge one and a half lakh rupees for an operation on a child with poor parents, can you contribute 30,000 rupees? That person is not going to give us any money. So we tell him that we are going to operate on this child and offer our services free. *Can you help us do it?* This has worked. A lot of people have given money.

Dr Devi Shetty's hospital, with 75 per cent, or even 50 per cent treatment devoted to the poor, is an extreme case. The CMC has three classes of services that may be roughly described as cost-plus, cost-equal, and cost-minus categories. The cost-plus category gets first class non-medical facilities like special wards and cross subsidizes poor patients who get lower non-medical facilities (general wards) but the same medical treatment.

We may generalize the idea by postulating a hospital that operates as a non-profit company and provides four classes of service:

1. The poorest who can access all treatment for free.
2. The less poor who pay only for the medicines.
3. The middle income group which pays both for medicines as well as the cost of the skilled medical personnel such as doctors, nurses, paramedics, administrative staff, and so on.

4. The rich who meet, in addition, interest and depreciation costs, and also, make a (tax exempt) contribution to a Charity Fund run by a separate trust.

The Charity Trust (which may receive contributions from non-patients as well) can meet the costs of treating the poor and subsidize the treatment of the second category. To the extent the state offers tax rebates, it shares the cost of treating the poor in a private hospital.

If the hospital operates as a non-profit company, shareholders may get a return restricted to the prevailing rate for long-term bank deposits. That return too may be made tax free. Then, more private capital will be attracted for a worthy social cause with the government making an indirect, but formal, contribution. Such tax rebates are a better option than either government subsidies or government-run hospital facilities. One, subsidies are subject to prevailing political whims and generally they are not always objective. Two, when the government itself runs the institutions, more often than not, efficiency suffers. It also becomes difficult to attract charity.

Tax rebates avoid these problems. The sacrifice the government makes in tax collections will be a fraction of the costs it would have incurred if it had had to provide the same service, which, normally is its duty. In other words, these tax rebates formalize the financial shares of a PPP in a transparent, non-selective manner.

The hospital can be run either as a society, as a trust or as a non-profit company. When run as a society, the management runs the risk of being captured by pressure groups. Several societies, which started with noble intentions, are known to have been politicized. Operating as a trust, the institution faces less risk of take-over but can suffer from inbreeding—because trustees have absolute control over who can succeed them, and tend to overlook outside experts. Functioning as a non-profit company has two advantages. One, power is distributed according to the financial contribution made. Two, its accounting standards will be high and transparent.

This model may be extended to education provisioning, and housing for the poor. In the case of schools, we can consider three classes: full fees in regular hours; marginal fees in evening classes, and free tuition over weekends. Alternately, we can ask (or estimate) at the time of admission what each student will be willing to pay. An admission test can then be held on a need-blind basis—by keeping the admission office unaware of how rich or poor

the candidate is. The results from the merit list and the fees-students-are-willing-to-pay list can then be combined to meet the required income to run the school with a maximum of meritorious students. Harvard conducts its admissions in this manner and has been able to maintain high standards of admission for over a century. The system also attracts charitable endowments.

In the case of dwellings, cost of land is the primary challenge, not the cost of construction. According to the World Development Report, typically, the bottom 30 per cent of the population in terms of income has an income share of barely 12 per cent. Hence, it can have access to only 10 per cent to 15 per cent of the total dwelling space. Many town planners do make provisions for low cost dwelling units, and yet, slums proliferate because they do not allocate even this minimum amount.

It is estimated that the country has 192 million dwellings (both urban and rural) of which only 51.65 per cent are pucca. Thus, there is an existing shortage of about 90 million houses. Taking into account future growth of population, India will ultimately need additional 20–50 million dwellings.²⁰ Instead of waiting for shortages to intensify, and then, organizing residential plots, suppose the housing supply is continuously increased and always kept in excess of demand. Then, the poor will not be short changed so long as their due share of 10–15 per cent space is kept open for them.

Housing and other infrastructure are best treated as distinct products for different categories of customers, with one schedule where full costs are charged, and a separate one where the marginal cost is low. Each requires different strategies.

It is not just obvious, but vital, that institutions of this type must offer the desired quality of service: If they do not, the rich will go elsewhere taking their surplus and their charities with them. Policy formulators and public leaders rarely appreciate the importance of maintaining quality. When funds are scarce, they should improve quality of service to attract more and more paying customers. Unfortunately, those who talk of inclusive development do not appreciate this need. Come budget crunch, they sacrifice quality, end up losing paying customers to set off an unstoppable downward spiral. It is no accident that all self-supporting institutions that help the poor, like the CMC, Narayana Hridayaylaya, or Harvard University, offer world class service. An inclusive development model in any of these sectors is not a charity; it is a self-sustaining business.

²⁰ National Housing Bank, Occasional Paper No. 1, May 2007.

7.8

Private and Public Health Insurance Models in India: A Balanced Approach

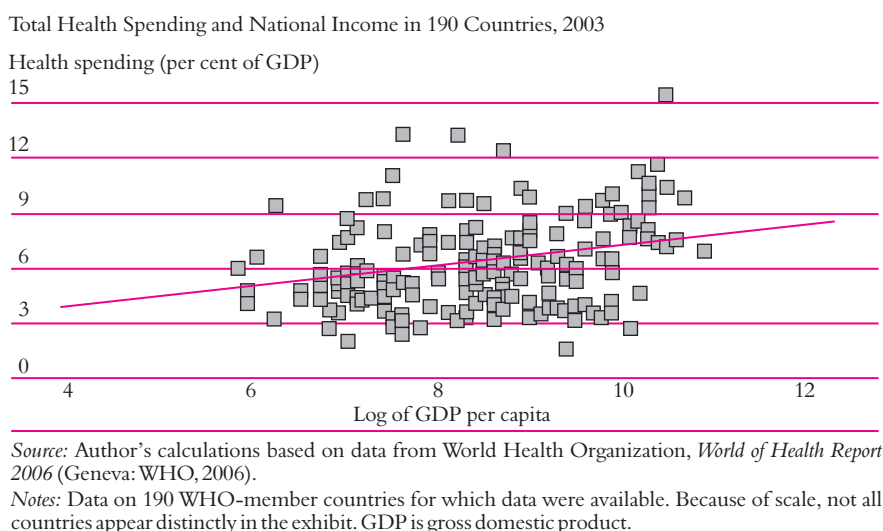
Ashoke Bhattacharjya and Puneet Sapra²¹

Financing health care for India's large uninsured population poses a complex health policy challenge with fundamental economic development implications. Synthesizing the findings of several recent analyses and proposals in the area of health care financing, this paper underscores the potential role and significance of various forms of health insurance as an enabling mechanism for promoting affordability and access to health care in India. In particular, it emphasizes the critical role that could be played by a well-designed and robust private health insurance system to expand health care coverage and access to a substantial chunk of the population that does have some ability to pay for insurance but can't bear the financial shock of catastrophic illnesses. Private health insurance has an important role to play in India, which faces enormous public health challenges and has a very large number who will continue to rely on public funded programmes for basic health care.

Owing to environmental and economic factors, India lags behind other countries in terms of health

status. According to the Human Development Report 2006 by the UNDP, on an average the total population ranks among the last fifty countries in infant mortality rate, life expectancy, and malnutrition. There are encouraging trends, however, indicating improvements in health status. For example, life expectancy has generally increased since 1992 and infant mortality has steadily decreased since the early 1970s. Some states and socio-economic strata of India are considerably different from the average, exhibiting human development indicators at par with high-income countries.

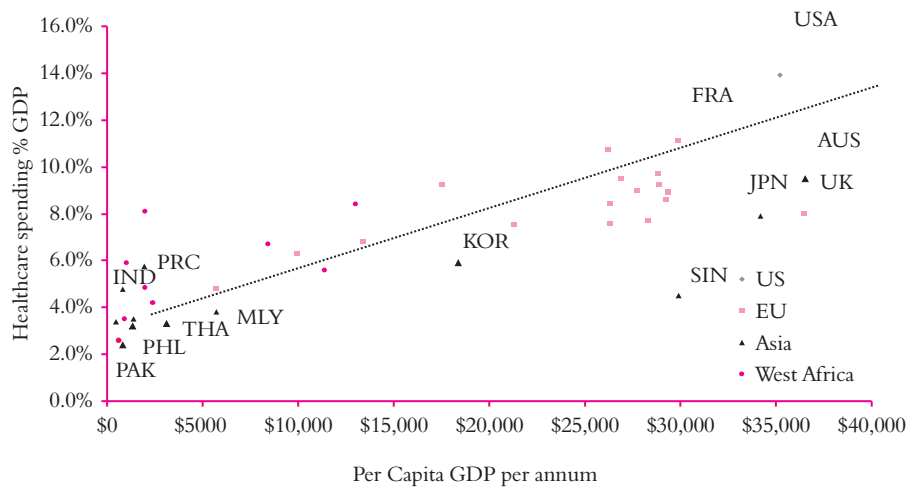
Improving health of the urban and rural population launches a virtuous cycle of economic development at a local and national scale, which, in turn, increases consumption of health care services. As discussed in the India Infrastructure Report 2006 epidemiological theories suggest that reduction in the prevalence of disease is positively related to increases in economic performance. Healthy people lead productive lives. As incomes rise, consumer demand for care also tends to rise (Figures 7.8.1 and 7.8.2).



Source: Savedoff Health Affairs, July 2007.

FIGURE 7.8.1: Health Spending and National Income in 190 Countries, 2003

²¹ The authors acknowledge the contributions of Manish Jain of Johnson & Johnson in researching this paper. The views expressed in this paper do not necessarily reflect those of Johnson & Johnson.



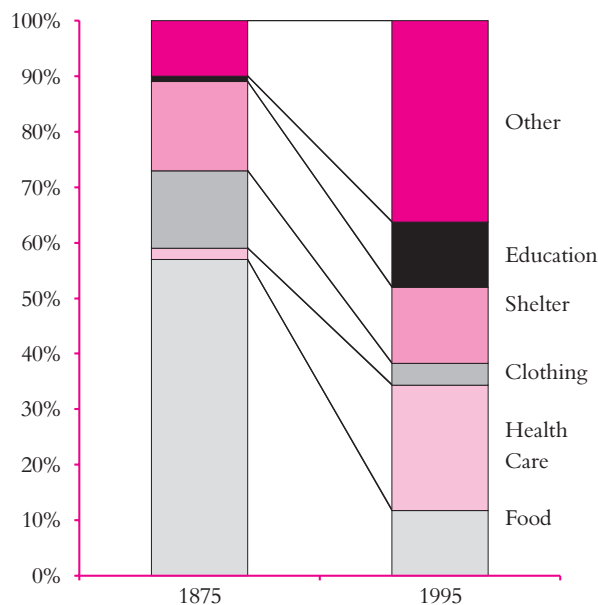
Source: Johnson & Johnson based on World Bank Development, Indicators, 2002.

FIGURE 7.8.2: Health Spending and National Income

The US experience offers an example: In 1875, U.S. generated \$ 2,457 GDP per capita (in 1990 dollars) and 2 per cent of consumption was directed to health care; in 1995, U.S. generated \$ 24,484 GDP per capita (in 1990 dollars) and 23 per cent of consumption was directed to health care (Figure 7.8.3).

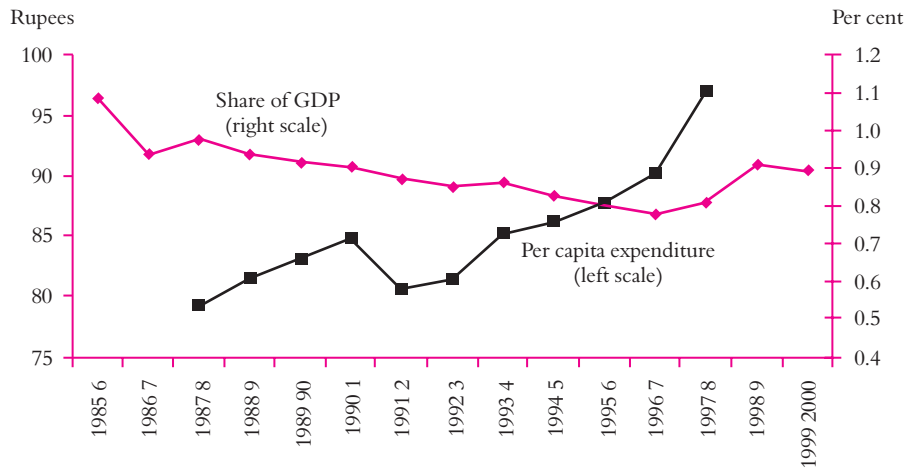
The experience in India has been no different. Public spending per capita on health in India from 1985 to 2000 has increased approximately 25 per cent (Figure 7.8.4). In terms of health care utilization, private health care consumption through hospital and non-hospital treatment has been growing rapidly since the mid 1980s. Despite the

increase in spending and utilization, the cost of health care has posed significant challenges. Hospitalization often means financial ruin for the poor because the cost of health care far exceeds the poor family’s ability to pay or borrow. Hospitalized Indians spent 58 per cent of their total annual expenditure on health care and almost 80 per cent of total health care expenditure is financed out-of-pocket (Figure 7.8.5). Almost 25 per cent of hospitalized Indians fall into poverty from medical costs (Figure 7.8.6). The reasons for this outcome are varied, but are ultimately linked to out-of-pocket expenditure being the most common source of financing of health care



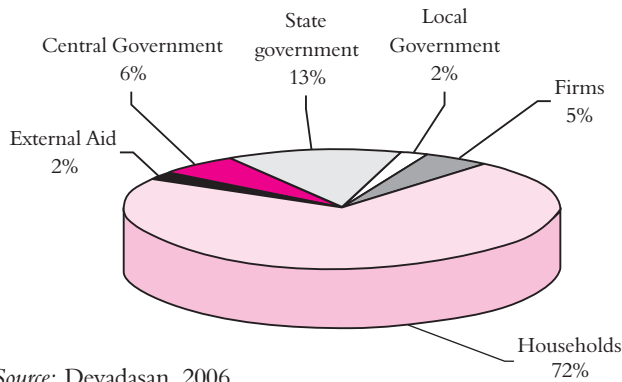
Source: Fogel, 2003.

FIGURE 7.8.3: US Consumption of Health Care



Source: Peters, 2002.

FIGURE 7.8.4: Public Sector Spending on Health in India, 1985–2000

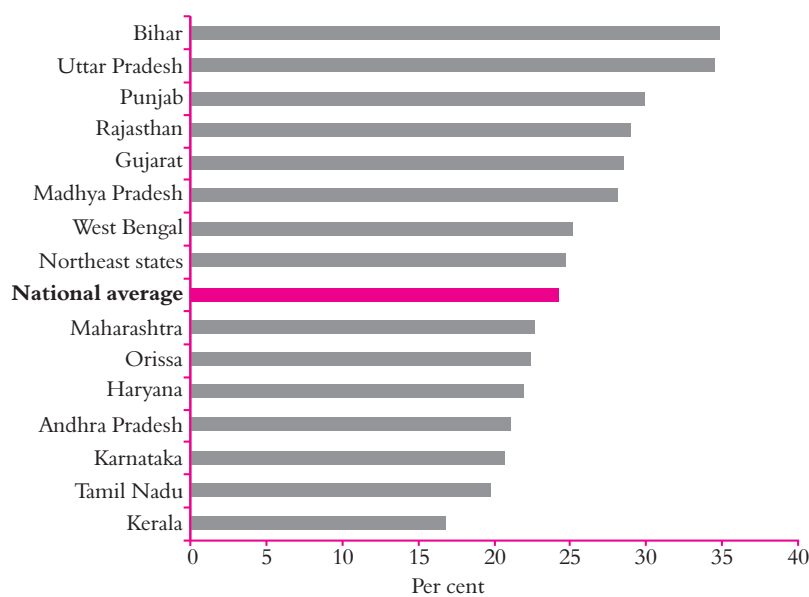


Source: Devadasan, 2006.

FIGURE 7.8.5: Health Expenditure Sources in India

in developing countries including India. Out-of-pocket or debt financing of health care is prevalent even in higher income levels, but most pronounced further down the income scale (Figure 7.8.7 and Table 7.8.1).

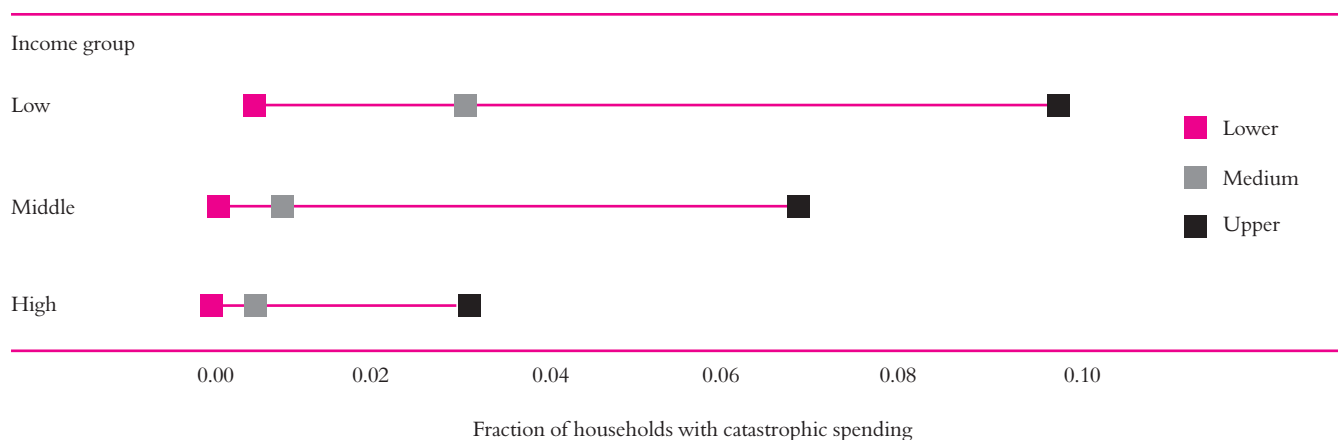
As India’s economy marches forward, the key question is how to couple increased demand for health care with increased supply of insurance coverage to enable greater access to care and avoid financial catastrophe of patients. Others have pointed out that universal health insurance solutions, such as the national insurance programme, fail to provide adequate financing and care in most developing countries in Latin America and Asia including India. A universal health insurance system alone cannot support



Source: Peters, 2002.

FIGURE 7.8.6: Percentage of Hospitalized Indians Falling into Poverty from Medical Costs, 1995

Distribution of the Incidence of Catastrophic spending among Countries, by Income Group



Source: Author's analysis of survey data.

Note: Regarding the incidence of catastrophic spending, the lower point is at the fifth percentile; the upper point is at the ninety-fifth percentile.

Source: Xu, 2007.

FIGURE 7.8.7: Catastrophic Spending among Countries

TABLE 7.8.1
Source of Finance for Hospitalized Care, NSS (1995–6)

Source of finance NSS 52	Urban		Rural	
	Lowermost 20 per cent	Topmost 20 per cent	Lowermost 20 per cent	Topmost 20 per cent
Borrowing	33	17	34.3	31
Past saving	26.1	41.5	20.2	25.5
Current income	18.1	9.9	14.1	10.4
Not specified	11.6	7.1	15.4	10.8
Other sources	5.4	11.2	6.9	8.4
Sale of assets ^a	4.8	5.2	8.7	13.1
Reimbursement by employer	1	8.1	0.4	0.8

Note: ^a Include draught animals, ornaments, and other physical assets

Source: NSSO (1995–6), National Sample Survey 52nd Round.

financing of health care for the poor, middle class, and the wealthy. A triad of reasons—social, political and economic—is responsible for this reality.

Mark Pauly of the Wharton School, University of Pennsylvania, has underscored (Health Affairs March/April 2006) that the amount of resources developing countries can devote to a universal health insurance system for all citizens is simply not enough. Developing countries such as India typically have large numbers of poor citizens at the base of the pyramid who demand drugs, devices, and preventive care. Aside from small quantities offered through charity or donor programmes, these products and services must be paid for at world prices and be furnished by high-wage professionals. For India and other developing countries, the scope for negotiating lower prices and

transferring services from high-wage to low-wage local labour is generally limited. Locally trained skilled professionals often emigrate to developed countries. This is not to say that government-funded health insurance will not work in India; it should play a key role in financing care for targeted segments of the poor, rather than financing care for India's population in its entirety.

Even if budget constraints could be resolved, allocating more public funding to health care requires difficult trade-offs. India does have significant resources that could be directed toward financing higher quality of care, and the central government has in fact recently committed additional public funds to health care initiatives. However, the political debate of transferring funds from economic, defence or other initiatives sometimes complicates the

follow-through. Savedoff (2007), senior partner of Social Insight, points out in *Health Affairs* that alternate uses of public funds play a role in determining what a country should spend on health care, and the preferences and resources of competing stakeholders direct where public funds are invested. These competing tensions have handcuffed health care spending, not only in developing countries from Peru to the Philippines, but also in developed countries such as the UK and France.

From an economic perspective, inferior tax systems coupled with fragile economies in transition form a disadvantageous predicament for universal health care insurance financing. Because developing economies, including India, lack large formal economic sectors, tax bases to fund universal health systems are too small. The irony is that good health tends to expand tax bases without which societal health care programmes cannot be funded. Both Pauly (2006) and Sekhri (2005) note that implementing taxes and tariffs on personal income or corporate income in developing economies has had limited success. Wages are too low to raise meaningful revenue. Taxing growing corporations would discourage economic growth and foreign direct investment. Mexico's experiment in raising public funds for universal health insurance through taxation was eventually reversed in favour of a more gradualist approach and policies encouraging private health insurance solutions.

Because of the shortcomings of social health insurance systems as a universal health care financing solution in developing countries, a segmented approach utilizing different forms of health insurance is the likely answer. A segmented approach may include the following options:

- Community health insurance or government subsidized social health insurance model for the organized, informally employed, and high risk segments.
- Government funded subsidies and health programmes model for the poor and disabled segments, supplemented by international donor or aid organizations.
- Private health insurance model for the majority who are of the formally employed or unorganized informally employed segments.

We briefly describe the role of private health insurance in expanding health care financing among other insurance models that have broadened access to health care and raised quality of care standards. While India will continue to need government-funded health care programmes, a good private insurance system plays an important role in bridging India's health care financing gap. We also outline principles the insurance industry and government should consider to upgrade standards that currently limit the sustainable expansion of health insurance.

ROLE OF HEALTH INSURANCE

The basic principle that underpins health insurance is remarkably simple. Health insurance is a mechanism that enables a large group of people to share the prepayment of health care expenses of the unlucky few that happen to fall ill. Insurance arrangements permit members of the group to pay smaller amounts over time and avoid catastrophic financial shocks upon falling ill. In order for health insurance to work, the group needs to be sufficiently large and diverse; this is the law of large numbers, otherwise known as 'risk pooling.' Risk pooling can take a variety of institutional forms, though here we will focus on community health insurance, social health insurance, and for-profit private health insurance. Each type of insurance can be applied to particular segments of the population, as will be discussed below, with varying degrees of success.

COMMUNITY HEALTH INSURANCE MODEL

Defined by Devadasan et al. (2006) as 'any not-for-profit insurance model aimed primarily at the informal sector and formed on the basis of a collective pooling of health risks and in which the members participate in its management,' community health insurance (CHI) has proliferated in the last twenty years and is the most common form of health insurance in developing countries. Typically run by NGOs, CHIs cover small membership groups from a common community. Its members, usually families with similar prior health risks, can afford to pay only small premiums in return for provision of limited health care benefits provided by local hospitals and physicians.

CHIs have been somewhat effective in addressing financial burdens faced by workers in India's informal sector. A host of hurdles, some common to all forms of health insurance, have limited the expansion of CHI. Fundamentally, because CHI programmes are structured around relatively small communities, they are threatened by insufficient diversity of income and health risks within its risk pool. Additional challenges to CHI include:

- Education and awareness within the community of the benefits of health insurance,
- Identifying alternate forms of premium beyond cash,
- Reliable demographic and morbidity data to price and design benefit packages,
- Sufficient technical and managerial capacity to administer collection procedures and monitor quality of care.

Despite its shortcomings, CHI does play an important role in financing health care in the informal sector (and in

India's economic development) since the informal sector employs about 370 million workers who contribute over 60 per cent of India's GDP, according to the Social Security Division of the Ministry of Labour. Previous IIR reports have profiled successful CHI programmes such as Yeshasvini Cooperative Farmers Health Scheme in Karnataka, which has more than 1.5 million members and enlisted more than 150 high-quality hospitals across a broad geographic area.

SOCIAL HEALTH INSURANCE MODEL

Tax financed or social health insurance (SHI) overcomes structural disadvantages of CHI because these programmes pool the health risks and incomes of an entire population into one common risk pool. Social health insurance models are most common in developed countries. In nearly every developing country with a functioning SHI system, however, the SHI has failed to provide adequate financial protection and access to care. India's experience has demonstrated that a thinly funded SHI covers only a very small proportion of India's population.

A variety of factors have led to this common outcome in SHI among developing countries. As has been discussed above, tax bases in developing countries are disproportionately low. In India, according to Promod Rai of University of Georgia School of Law, the percentage population filing income tax returns is approximately 2 per cent. There are numerous reasons for the low tax base in developing countries, including a large informal sector, low wages, and the possibilities of substituting non-taxed income for the tax base. Secondly, excessive taxation of small and medium-sized corporations tends to discourage growth-inducing investment. Finally, SHI systems often rely on low-quality public sector provision of health care. Without sufficient domestic budgets to adequately fund health care services, governments choose to limit the scope of public sector health care providers thereby limiting access to quality care.

PRIVATE HEALTH INSURANCE MODEL

Private health insurance (PHI) is defined here as a voluntary insurance plan designed by a publicly owned institution and financed by premiums provided directly by the insured. Government and private employers also offer health insurance through self-funded programmes (Table 7.8.2).

PHI offers a viable health care financing solution for a significantly large segment of India's population. The approximately 500 million middle-class in India who lives above the poverty line and work in the formal or semi-formal sectors has the ability to pay a larger premium for PHI benefits. Community health insurance and social

health insurance, for reasons already outlined above, cannot satisfy the large middle class population's health care financing needs. Community health insurance, for example, does not have the structural or managerial heft that a larger population would require. Social health insurance and other publicly financed systems do not have the ability to finance health care for such a large population from a small tax base. These limitations of CHI and SHI rope health care financing to levels below the levels required to cover health care needs of the middle-class formally employed segment.

The experience of some developing countries suggests private insurance can have fairly deep penetration among segments of the population who have the capacity to pay sustainable premiums. In most cases private health insurance is supplemental to other forms of CHI or SHI. Most of the Mercosur countries of Latin America, English-speaking countries in the Caribbean, and countries on the Arabian Peninsula have a large fraction of private spending covered by insurance. Private insurance covers a significant portion of the population (above 25 per cent) in Zimbabwe and South Africa. Blended public insurance and private insurance approaches used by these countries represent a successful model due to the attractive cost-benefit mix of the insurance plans from a demand perspective and administrative efficiency from a supply perspective.

In the context of developing countries, private payment for insurance may actually be more efficient as a financing system than publicly financed systems. Consider a government decision to raise taxes within a limited segment of the economy to collect revenues to improve health care—the small sum that the government would end up raising would not justify the distortionary effects it could have for the rest of the economy. Although administrative costs of private health insurance companies in developing markets can be as high as 30 per cent of the premium collected, the costs of increases in levies could be much larger by comparison and be detrimental to growth of the broader economy.

TABLE 7.8.2
Number of Employer-funded, Commercial and
Private Health Insurance Beneficiaries

	(million)
Central, State (ESIS, CGHS)	30.1
Employer based	40.1
Commercial	11.0
Public sector non-life	10.0
Private sector non-life	0.8
Health segment of life	0.2
Total	81.2

Source: IRDA Journal August 2006.

EXPANDING HEALTHCARE COVERAGE

The PHI market in India is poised for growth. Since 2004 premiums collected by PHI institutions have grown by 77 per cent to more than Rs 13,500 crore (US\$ 135 billion) and beneficiaries covered have expanded to more than 15 lakh (1.5 million) (Table 7.8.3). A million and a half beneficiaries represent less than 1 per cent of the Indian middle class. Premiums collected represent approximately 20 per cent of total insurance premiums. With obvious favourable implications for affordability and access to care for the middle class and more effective allocation of public funds to the poor, India has great incentive for the PHI industry to grow to the next level.

Pricing, value-based purchasing, quality of care standards, and information asymmetries ought to be addressed by the PHI industry to sustain the current growth rate. With respect to pricing, PHI institutions should price insurance products appropriately and competitively. Better-designed pricing incentives would address pricing distortions that are the result of ratings methods, risk selection or cream skimming. Arbitrary or unreasonable exclusions or limitations of benefits covered must be avoided. For private health insurance to be truly useful and desirable, such insurance must continue to provide coverage to elderly patients who have been previously enrolled when younger or healthier, albeit at reasonably risk-adjusted rates that are still affordable. Competent public and private health care financing organizations could lead a system-wide improvement by implementing well-designed regulatory and internal incentive systems, respectively.

To sustain high quality of care and maintain costs, PHI institutions can promote provider competition by employing value-based purchasing of provider services on behalf of beneficiaries. Increasing transparency in pricing, quality, and cost-effectiveness of care will not only assist better providers for empanelment, but also empower beneficiaries to find better value and better care.

Finally, PHI institutions can encourage efficiency on both demand and supply side by addressing information asymmetries. From a supply side, provider payment incentives could address moral hazard and over-treatment of patients that lead to higher transaction costs and extraneous payments. In addition, PHI firms could establish consistent use of billing and medical records systems among empanelled providers to reduce erroneous claims and administrative costs. From a demand perspective, financial risk-sharing plans with beneficiaries could help discourage over-consumption of health care.

While self-regulation of the above issues by the PHI industry represents a necessary condition to expand PHI, success also requires government and regulatory bodies (such as IRDA and others) to support the health insurance industry with standards on insurance plan design, exclusion criteria, quality of care metrics, and other economic incentives. Legislation and regulations establishing pragmatic rules for healthy competition, including standards for fiscal oversight, transparency, and market stability mechanisms would do a great deal to improve health care financing and delivery.

Healthcare costs, if not properly financed, are a significant risk to economic growth. Well-designed health insurance models, in general, and private health insurance

TABLE 7.8.3
Private Health Insurance Market, 2004–5

Insurer	\$ millions	% total	Growth	Number	% total
ICICI Lombard	68.61	12.20%	131.07%	762,386	7.60%
Bajaj Allianz	24.39	4.30%	38.29%	271,028	2.70%
Royal Sundaram	12.47	2.20%	68.15%	138,550	1.40%
IFFCO Tokio	12.99	2.30%	83.52%	144,353	1.40%
Tata AIG	7.65	1.40%	14.93%	85,047	0.80%
Cholamandalam	5.28	0.90%	4.96%	58,639	0.60%
Reliance	2.15	0.40%	7.96%	23,906	0.20%
HDFC Chubb	1.14	0.20%	129.89%	12,631	0.10%
Private sector	134.69	23.90%	77.21%	1,496,539	14.80%
New India	167.32	29.60%	39.52%	3,346,415	33.20%
National	82.61	14.60%	3.73%	1,652,205	16.40%
United India	89.81	15.90%	22.23%	1,796,275	17.80%
Oriental	89.95	15.90%	31.57%	1,799,050	17.80%
Public sector	429.7	76.10%	25.86%	8,593,945	85.20%
Total Commercial	564.39	100.00%	35.21%	10,090,484	100.00%

Source: IRDA Journal 2006 and Johnson & Johnson estimates.

models, in particular, can expand access and lower costs. While India will continue to need government funded health care programmes for the poor, a good private insurance system can play a vital role in bridging India's health-care financing gap for the growing middle class. To broaden

the scope and sustainability of private health insurance, the industry will need to address issues of pricing, benefit design, and transparency and government will need to support industry with prudent economic incentives, coverage criteria, and quality standards.

7.9

The Byrraju Foundation's PPCP Model for Education

Y. Suresh Reddy and Verghese Jacob

The Byrraju Foundation targets major government schools in the villages it has adopted and facilitates the creation of 'Model Schools' under its School Education Programme. The schools are supported through a public, private, and community partnership framework, over a period of two to three years, both in terms of improved infrastructure as well as academic standards until they are at par with well-run urban schools.

Currently, a total of 260 schools in 182 villages in six programme districts are being transformed into Model Schools. Out of these, 168 are primary schools (grades 1 to 5) and 100 are high schools (grades 6–10). This programme directly benefits 120,000 students and 2000 teachers and impacts over 200,000 rural population in Andhra Pradesh.

PUBLIC, PRIVATE, AND COMMUNITY PARTNERSHIP MODEL

A public, private, and community partnership model is based on a collaborative framework, within which the Foundation actively partners the government, alliance partners and the village community to pool together best practices for the benefit of rural children. These best practices relate to diverse areas such as teacher training, teaching/learning content, computer aided education, innovative use of technology, creative methodologies, quality improvement assessment, early childhood education programme, and programmes for challenged children.

Two such collaborations established for technology-based learning interventions are:

COMPUTER AIDED LEARNING PROGRAMME

Computer-Aided Learning (CAL) is an integral part of the Foundation's Model School programme. Within CAL, the Foundation provides each of the schools—primary, upper

primary, and high schools—equipment such as computers, TV, DVD player, two-in-one, public address system, and power back-up.

Along with the equipment, supporting multimedia content is provided to the schools for imparting knowledge to children. Content in the form of CDs or DVDs is sourced from agencies such as Azim Premji Foundation, UNICEF, National Green Corps, International Literacy Institute, and Eureka Multimedia content. The content pertains to diverse subject areas such as language development, new approaches to science and mathematics, environmental education, and some fun filled activities. Most of the content is designed keeping in view the curriculum needs of the schools. Given that nearly all the teachers are first time users of multimedia content, training is provided to facilitate their understanding and integration of CAL into day-to-day teaching–learning processes.

CAL Programme-specific Roles and Responsibilities of Partners

The roles and responsibilities of partners are defined at two stages—first, procuring of equipment and second, sourcing of content and teachers' training.

Acquiring Equipment

- The village community contributes 25 per cent of the cost of equipment and monitors the implementation of the programme.
- Subsequently, Byrraju Foundation contributes 25 per cent of the cost of equipment as a matching grant to the contribution made by the community. The Foundation also facilitates and coordinates the programme implementation in 260 rural schools and mobilizes community support.
- Later the government Education Department contributes 50 per cent of the cost of the equipment and supports the Foundation in training the teachers.

Sourcing Content and Providing Teachers' Training

- Partnering agencies like Azim Premji Foundation, International Literacy Institute, National Green Corps, and UNICEF not only provide multimedia content, but also provide training support to teachers in regard to the CD content, its usage, navigation techniques, and other support.
- The Foundation facilitates and coordinates sourcing of multimedia content, distribution and/or installation of such content in schools and relevant teachers' training.
- Government ensures that there is deputation of teachers for the training programme and takes care of logistics.

The impact of CAL on the children is has been palpable. They are demonstrating good understanding of the concepts, as well as familiarity with computers and IT terminology. They are showing increasing interest in attending the school. It is a way of fun-filled learning for them—a new experience that they are cherishing.

IBM KIDSMART PROGRAMME

The 'IBM KidSmart' is the only programme in India aimed at introducing technology at the pre- and primary-school levels in government schools. It is designed to help children in the age group 3–8 years from disadvantaged sections of society to get a head-start in their academic development. The programme helps children understand basic concepts in language, maths, and science, and focuses on developing reading skills among children.

In the above context, Byrraju foundations' expertise in rural transformation helped IBM launch this programme for the first time in partnership with the government and the village community across 101 schools in rural

Andhra Pradesh. Each of the 101 centres imparts training to nearly 250 students and also caters to children from neighbouring schools, and pre-school centres. A total of 25,000 children have benefited through this programme.

KidSmart Program: Specific Partnership Roles and Responsibilities

IBM supplies and installs about six to eight Young Explorer Units in every school. These units are specially designed, child-friendly computers with colourful furniture, pre-loaded with age-appropriate software, printers, and educational material. It also organizes training of teachers with respect to teaching methodologies, pedagogy, and integration of technology into the school curriculum.

Government Education Department builds/renovates the 'Early Learning Centres' in the selected school premises, meets the monthly costs of teachers' salaries and power supply.

Byrraju Foundation facilitates the implementation and running of the programme for the entire life cycle of at least five years. The Foundation contributes through efforts to mobilize community support, liaise with all concerned parties, and develop an active network of teachers for sharing and transferring best practices.

The village community closely monitors the programme through many community volunteers and supplements the school needs. The KidSmart centre has become the pride of the entire village.

This programme is a good example of how corporate partnerships with the community, the government and other non profit organizations are able to bring about holistic rural community transformation. The KidSmart programme has resulted in significant increase in enrolment, learning standards, and motivational levels.

7.10

Education Vouchers and One Campus and Many Schools Models to Deliver Primary Education in Remote Areas

Anupam Rastogi and Shreemoyee Patra

Educationists and policy makers alike have emphasized strongly on the socio-economic significance of elementary education for decades. While a number of well-

meaning official resolutions and judgments have been passed in the history of the country on ensuring education for all Indian children, the three fold objective of

'universal access, universal retention, and universal achievement' leading to the ultimate goal of universal elementary education (UEE) remains unattained. More than 3 crore children are out of school in India, the majority from rural areas in spite of Sarva Shiksha Abhiyan.²² Even the Approach Paper to the XI Five Year Plan which seeks empowerment through education is unable to offer meaningful solutions for high drop-out rates and poor quality of schooling (Ward, 2007).

While parents today are motivated more than ever before to obtain quality education for their children, the public sector has failed them miserably. The private sector is both capable of and aggressively interested in filling in this need gap. It is unfortunate that even in the minds of the poorest, the belief strongly resides that free public education is substandard and under-provided; it must be foregone in favour of expensive but 'better' private education. In Kerala, a rising number of children are moving to private schools even at the elementary level, leaving many state-run schools with a slim student base. There needs to be a serious effort to recognize and experiment with pedagogies that work within the existing resource constraints to stimulate enrolment, provide basic education to the newly enrolled, as well as bridge education to those who for one reason or the other have dropped out. The problem lies not so much in lack of endowments in the sector as in poor management, organization, and governance of primary schools.

Emphasis laid thus far on enrolment and attendance (through the mid-day meal scheme) needs to be reevaluated to the actual extent of learning imparted and translated to reading, writing, and basic arithmetical capabilities of students. Innovative access solutions at the local level to private schools can not only facilitate higher outreach but also bring about improvement in the local public schools due to competition from privately-run institutions.

EDUCATION VOUCHERS

Under this system, all parents will get education vouchers from the state, free of cost, which they can offer to private schools in lieu of fee payment. The schools can later encash these through state agencies. A successful voucher scheme will encourage the private sector to meet the demand of primary education services especially in remote areas, but the government will have a significant role in monitoring the quality of education offered in

exchange for vouchers through effective implementation of certification and accreditation procedures.

Poorer households may be provided higher value vouchers in order to safeguard against any discrimination that they may face with private providers reluctant to enroll children from backward groups and to ensure that drop out rates are reduced. In other words, the cost of educating these children might be greater, requiring greater public financing. Estimates suggest that public expenditure on the voucher system might be much less than running public schools.²³ The government may have to continue paying teachers in state-run schools even while the voucher system is being implemented and in need of financing. But this additional burden on the state pocket is more than justified in terms of attaining the goal of universal education.

ONE CAMPUS-MANY SCHOOLS MODEL

In the One Campus-Many Schools model,²⁴ designed mainly for rural India, the state will build schoolrooms around a playground and lease them out to teacher entrepreneurs to run primary schools from standard I to IV according to the curriculum designed and approved by the state. The state will continue to support primary education by giving educational vouchers to all eligible children which can be used to pay fees in any school of their choice run by the teacher entrepreneurs.

THE BUILDING

Four blocks (two-room sets) may be constructed around a common playground and each of these sets may be leased out to a teacher-entrepreneur with minimum higher secondary qualifications. Thus, eight rooms managed by four teacher-entrepreneurs with a capacity to accommodate 240 students (30 in one room) comprising two units each of class I to IV are envisaged in this model.

THE FINANCIALS

The construction cost of one school campus (four blocks with two rooms each) is estimated to be Rs 2.40 lakh. The blocks shall be leased out at a minimum rent of Rs 500 per month renewable after three years. Under the agreement, the teacher-entrepreneur shall have to employ at his/her own cost, at least one teaching assistant who is HSC pass at the minimum.

²² Chen (2002). Education for a Lifetime, The Hindu, January 13.

²³ Arvind Subramaniam, (2007), 'An Alternative to Reservations', Business Standard, 16 June.

²⁴ S. Kumar, B.J. Koppa, S. Balasubramaniam (2003), 'Primary Education in Rural Areas: An Alternative Model', Economic and Political Weekly, 23 August.

The government shall provide educational vouchers (Rs 100 per month) to all students through ration shops, local post office or local branches of commercial banks. The voucher cost for 1 lakh children will be Rs 12 crore per annum. The teacher-entrepreneur shall collect the vouchers from the students and encash them at par in a nearby post office or bank only after the signature/thumb impression of the mother of the child has been obtained. The movement of vouchers should be available on the internet similar to the railway reservation system.

It is expected that a motivated teacher getting a contract for running two classes should be able to admit the maximum of sixty students in a year. Hence they can earn up to Rs 6,000 per month (Rs 100 voucher per student per month). After paying the rent and the salary of the teaching assistant, the teacher should be able to retain at least Rs 3,000 per month.

Another incentive which can be provided to the teacher entrepreneur is that he can use the buildings beyond school hours to augment his/her earnings through tutorial classes, vocational classes, hobby classes and so on for students and villagers not enrolled in his school. The

lease agreement shall specify norms within which such activities beyond school hours are permitted.

QUALITY OF EDUCATION

The strong inbuilt competition among school blocks to attract students can ensure the quality of education in terms of regular attendance of teachers and students as well as proactive teaching methods. Teachers may seek guidance from state education boards or NGOs for curriculum design. Under the system, schools that do not perform will lose their students and their funding. The parent's freedom to rejecting a school and enrolling the child in another will keep the teachers on their toes and save the child from the irrecoverable loss in terms of time.

EMPLOYMENT GENERATION POTENTIAL

An additional attraction for adopting such a model lies in the fact that an estimated 33,000 teachers (currently educated unemployed youth) per lakh children can be gainfully employed at a monthly income of Rs 3,000.

7.11

A PPP Model for Vocational Education: Upgrading the ITIs

Partha Mukhopadhyay²⁵

INTRODUCTION

In a series of announcements over the few past years, the government has declared its intention to revamp the vocational education sector. One of these initiatives is to upgrade the Industrial Training Institutes (ITIs). Indeed, in its first budget, it announced a '*programme in the Central sector to upgrade 500 ITIs over the next 5 years at the rate of 100 ITIs a year... and create a public-private partnership model for designing and implementing the scheme... to produce technicians of world standard*' (Union Budget Speech by the Finance Minister, July 8, 2004 at <http://indiabudget.nic.in>). There has been some movement in this direction. In some states, there has been increasing involvement of private

management in some ITIs. Industry associations have also begun to get involved in the initiative.

However, unlike, for example, public-private partnership (PPP) in roads and ports, the effort has been sporadic. The Report of the Working Group on Skill Development and Training set up for preparation of the XI Plan²⁶ can be considered a good guide to the current thinking on the subject. It is relatively candid in acknowledging the problems facing vocational training in India today and suggests a move to a more modular system, competence based certification at different skill levels, improving the quality of trainers, making training more relevant to the demand for skills, including meeting skill demands from the unorganized sector through short-term courses. This is

²⁵ Views expressed in the chapter are of the author.

²⁶ http://www.planningcommission.nic.in/aboutus/committee/wrkgrp11/wg11_rpskill.pdf

congruent with an earlier ILO DGET report in 2003 (Gasskov et al., 2003)²⁷ recommended a move to (a) competence-based vocational qualifications; (b) levels/grades of vocational proficiency; (c) testing and certification of skills acquired through practical experience; and (d) modular-based vocational programmes.

The Report recommends the continuation of twenty-two on-going Plan schemes and the introduction of sixteen new schemes. Table A7.11.1 provides a brief description of these schemes and the suggested financial outlays for these schemes. The shaded schemes are the suggested new schemes, while the ones in boldface are schemes that appear to predominantly involve construction of new buildings. We focus on these schemes since they are prima facie amenable for PPP.²⁸

As shown in Table 7.11.1, of the twenty-two on-going plan schemes, seven are building related, but they make up 96 per cent of the suggested financial outlay. Similarly, of the sixteen new schemes proposed, eight are building related but they constitute 98.5 per cent of the suggested outlay. These fifteen of thirty-eight schemes, therefore, comprise 98 per cent of the suggested outlay for the Eleventh Plan. Even if one excludes the single largest item, viz. Rs 7500 crore for 1500 new ITIs in the blocks having no ITIs at present, the share of building related schemes remains high, at Rs 889 crore or 87 per cent of Rs 1021 crore. However, despite this large suggested outlay, the PPP aspect of this expenditure apparently remains limited to Rs 545 crore, as part of the on-going plan scheme and a little less than 5 per cent of the total suggested outlay.

TABLE 7.11.1
Share of Building Related Schemes in
Vocational Education Schemes

	Total Financial Outlay (Rs Crore)	Building Related Schemes (Rs Crore)	Share
On-going Plan Schemes	2430 (22)	2334 (7)	96%
Suggested Plan Schemes	8521 (16)	8389 (8)	98.5%
All Schemes	10951 (38)	10723 (15)	98%

Note: The classification of the schemes is by the author.

Source: Report of the Working Group on Skill Development and Training set up for preparation of XI plan.

The following sections review the existing system for vocational training in India, specially the involvement of the private sector and current initiatives for using PPP

and the systems in other countries, notably in Germany and Japan. A structured PPP arrangement is proposed that is designed to meet the specific challenges of the Indian situation.

EXISTING SYSTEM FOR VOCATIONAL TRAINING IN INDIA

On the face of it, the existing system for vocational training in India is quite extensive. There are a number of institutions that offer training and the reported capacity of these institutions is substantive as compared the workforce in the organized sector. However, the current system is not performing up to standard. Over 25 per cent of the seats for apprenticeship training (more than 60,000 seats) remain unutilized. The report of the Second National Commission on Labour in 2002²⁹ points out the following lacunae in the present system of trade apprenticeship training, which can be grouped into three core problems, viz.:

1. Mismatch in the supply of training for trades and the kinds of skills that are in demand;
 - a. Inadequate coverage of skill requirements. As Gasskov et al. (2003) notes 'the principal comment received from companies is that they *do not consider the ITI graduates as suitable for immediate employment.*'
 - b. Inability of small firms to hire apprentices.
2. Inadequate and poor quality of training facilities as well as training staff.
3. Procedural issues emanating from public ownership:
 - a. Lack of flexibility in engaging trade apprentices within the same trade group.
 - b. Lengthy and clumsy administrative process for record keeping and filing up returns.
 - c. Lack of incentives to encourage industries to modernize their training facilities.

Gasskov et al. (2003) also find that the internal efficiency, as measured by share of sanctioned strength utilized, the drop-out rate, and the pass percentage is often low for a variety of courses, sometimes dropping to below a third. External efficiency or market acceptance, is also low, the major reason being: low demand from organized industry for ITI graduates; due in part to the '*financial, management and operational inflexibility of ITIs and lack of*

²⁷ <http://www.ilo.org/public/english/region/ampro/cinterfor/news/gasskov.pdf>

²⁸ They can be given the responsibility of construction; equipping and maintaining these facilities, as in the schools and hospitals in the UK even if the training activity is not transferred to them (the model discussed here also envisages the transfer of training responsibilities).

²⁹ See http://labour.nic.in/lcomm2/nlc_report.html for the full report.

incentives for them to deliver courses that more accurately reflect a potential demand for graduates.'

To redress these shortcomings, the Second National Commission on Labour recommended, *inter alia*, a stronger link between industry and vocational training and private involvement in the improvement of training facilities. The involvement of private participation is usually expected to result in the following benefits:

1. Improvement in service delivery by providing incentives to private service providers in a manner that is difficult under public sector procedures. This can be expected to lead to better alignment between the demand and supply of craftspersons.
2. Reduction in the requirement for public funds for investment in training facilities by allowing revenue generation from an appropriate set of activities and from an appropriate target group. This is especially important for trades that need a high level of capital investment in building training facilities.

It is important to recognise that extra revenue generation can happen in the public sector too. The implicit assumption is that the acceptability of increased fees would be more in the private sector, presumably because of better service delivery and improved job placement.

Gasskov et al. (2003) also reinforce these conclusions by recommending a review of the national training policy to reorient the ITI skills training programmes and address skill development needs of the unorganized sector³⁰ and the non-industrial services sector. This is sought to be achieved by (a) selective rationalization of enrolments on long-term courses; (b) introduction of training programmes in new industrial trades; (c) introduction of training courses for educated school leavers in non-industrial trades, and (d) introduction of short courses in basic and other industrial trades for school drop-outs, unorganized sector workers, and school graduates. They also recommend reforming the ITI's funding mechanism by making it more dependent on enrolment, provision of greater autonomy to the ITIs and introduction of an accountability framework.

In this respect they find that the current positioning of ITIs as part of government with the staff being civil servants, and capital assets and recurrent budget being part of the government budget, are major obstacles to improvement of ITIs' internal and external efficiency. They feel that government budgeting and financing

system sends the wrong signals to ITIs. It does not differentiate between the institutes that do, or do not, maintain high internal and external efficiency. It provides guaranteed funding per institution and staff assigned to it. State governments do not hold ITIs accountable for their performance outputs. Measurable data on numbers of graduates trade-wise were not available in any of the states reviewed. ITIs are not required to monitor the labour market performance of their graduates and report on their success.

The Working Group restates all these shortcomings and adds that there is inadequate budget provision for raw material, consumables, and maintenance in most of the ITIs, the infrastructure in ITIs is poorly maintained and very importantly, a substantial number of ITI trainers are not qualified/certified Crafts Instructors.

PRIVATE INDUSTRIAL TRAINING IN INDIA

Reform of the vocational system in India is not just a matter of introducing private participation. Indeed, private participation in industrial training is extensive and long standing. The number of private ITIs, called Industrial Training Centres (ITCs), at 2577, far outnumbers the 1470 ITIs but the average private ITC has only half as many trainees (107) as the average public ITI (207).³¹

Most private ITCs do not receive any government aid (some states provide grant-in-aid to a limited number of ITCs to defray expenses related to teacher salaries). In comparison to ITIs, many ITCs are thus funded entirely either by user fees or private charity. If there is such a strong level of participation from the private sector, what is the rationale for a PPP model? Is it not possible for ITCs to serve the needs of industry by strengthening pure private delivery? There are several factors that cramp the possibility of ITCs successfully playing this role. These are considered below.

GEOGRAPHICAL CONCENTRATION

Private ITCs are concentrated geographically, as compared to public ITIs. Nearly 70 per cent of the ITCs are in four southern states with a further 12 per cent in Maharashtra and Gujarat. The distribution of training capacity is, however, more evenly distributed. Note that the East has few ITCs on ITIs (Figure 7.11.1). While these states are also the industrial powerhouses of India, there may also other factors at work, such as the demand for trained and certified craftsmen from the Gulf countries, which creates a

³⁰ Gasskov et al. (2003) find that the number of ITI graduates going to the unorganized sector is actually quite low. They surmise that this is due to lack of entrepreneurial inclination, narrow range of skills market saturation, and low job quality.

³¹ See <http://dget.nic.in/schemes/cts/NumberOfITIs.htm>. There are discrepancies in this disaggregated data and the data on total ITIs provided in the National Vocational Training Information Service accessed through <http://dget.nic.in/lisdapp/nvtis/nvtis.htm>

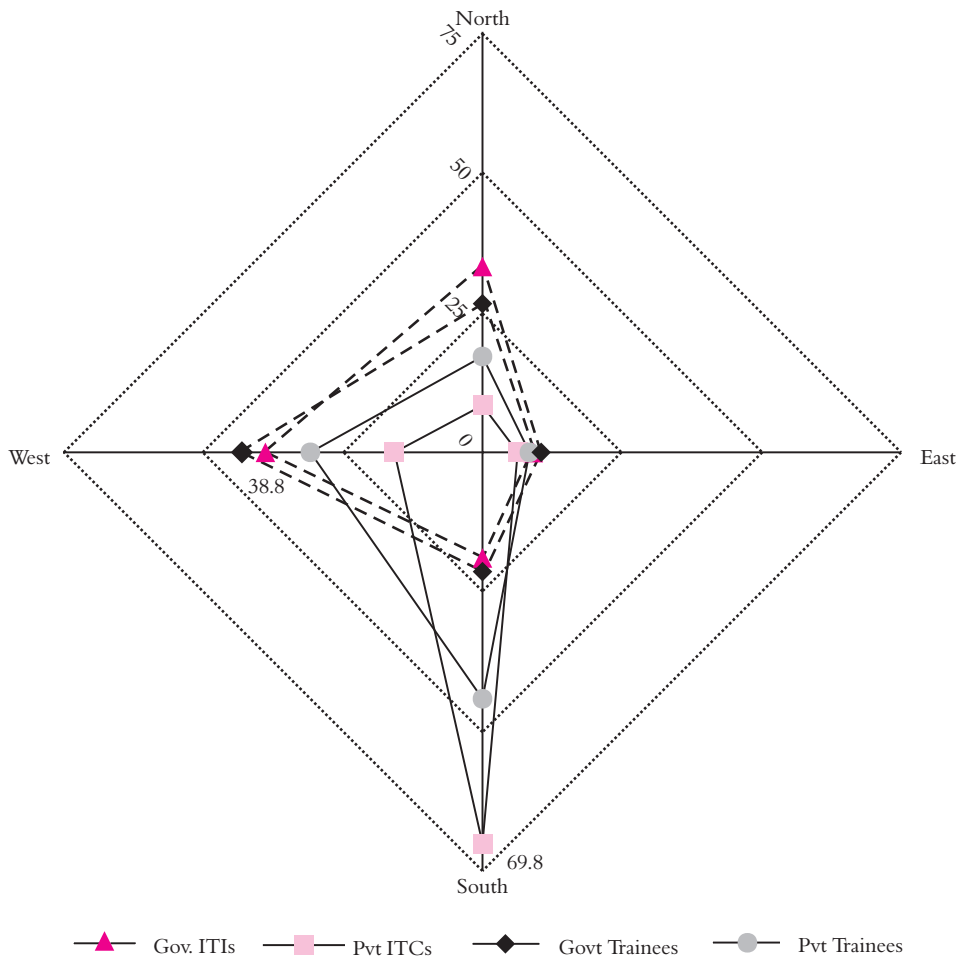


FIGURE 7.11.1: Geographical Distribution of Private ITCs

derived demand for training in these states. Recently, a large number of workers have been sent back from the Gulf for not possessing certificates.

SMALL SIZE AND LIMITED TRADE OFFERINGS

ITCs have fewer students than public ITIs. In part, this is because the private ITCs offer fewer trades, preferring to concentrate on those trades that do not require large capital investment. This implies that trades such as diesel mechanics, machining (especially CNC machining), milling, and so on, that need expensive equipment for providing training, do not benefit from the private sector expansion in capacity. Such trades will be required in large numbers if India is to become a manufacturing superpower.

FINANCIAL SELF-SUSTAINABILITY

Most ITCs are financially self-sustaining. The lack of public support implies that private ITCs, for the most part,

charge market-based fees to recover costs (fees at public ITIs are nominal). Even among those few ITCs that receive grants-in-aid, to cover a portion of their teacher’s salaries, many are allowed to charge market-based fees. There is, therefore, an existing culture of user fees in industrial training. This does not imply that there is full cost recovery from fees, as private charity may be picking up a portion of the cost.

INDUSTRY LINKAGE

The students have little exposure to industry while they are at the ITIs. Some ITIs offer a system of campus placement and maintain links with industry for that purpose, but this does not extend to training during the period of study though graduates of ITIs/ITCs are expected to join industry as apprentices in order to gain industry experience.³² Nor is there much industry linkage in terms of curriculum interventions. The situation is not much

³² Firms above a certain size are obliged under the Apprentices Act 1961 to employ apprentices. The stipend of these apprentices is shared equally between the employer and the Central Government.

better in the ITCs. Survey evidence in Gasskov et al. (2003) indicates that the placement performance of ITCs may not be better than ITIs, especially in states like Andhra Pradesh where there has been a rapid expansion of ITCs.

There is now increasing interest from industry and the involvement of industry bodies in vocational education. As the need for trained manpower is felt, there is an emerging trend of private ITCs being established by industrial entrepreneurs to cater to their own requirements. However, this is not necessarily optimal from the point of view of completeness of the trainee's education. The complete replacement of industry based training with on the job experience is not always healthy for the skill development of the craftsman, especially from the point of view of multi-skilling and the inculcation of a healthy attitude of innovation and experimentation.

PPP IN INDUSTRIAL TRAINING IN INDIA

Apart from private ITCs, there is now a growing effort to involve the private sector more intensively in the functioning of ITIs. One manner of involving them has been the constitution of Institute Management Committees (IMCs), which have been established for 492 ITIs in 28 states.³³ According to the Working Group an actively functioning IMC can bring about significant improvements in the functioning of ITI in areas such as (a) up-keep of machinery and equipment and donation of tools and equipment, (b) training and development of faculty, (c) student placement and industry interaction, and (d) revenue generation. They also have better management information systems regarding institute functioning and student performance.

Building on the experience of IMCs, six types of models of PPP have been outlined in the Report of the Working Group. The most limited version involves consultancy by the private sector plus support in issues like trainer education, quality assurance, and so on. Other versions involve technical inputs by industry associations and levels of increasing involvement by industry. The model with the greatest transfer of responsibility involves autonomy of the IMC.

In the model, the ITIs would be made autonomous by registering them as a society. The state government will sign an MoU with the IMC for various aspects related to

management, training delivery, and output. The IMC will be free to take operational decisions and generate funds through fees, consultancy, and job work. The success will be judged by various indicators such as results, dropouts, number of applications received, placement and so on. The state government may provide funds to the institutes at the present level, which will be reduced in the future. A variation of this model entails adoption of an ITI by an industry association, by leasing it for a certain period, paying a certain lease fee. The industry association will be free to provide additional training staff and if needed, the existing staff could be considered for transfer by the state government to another ITI. The new management would be free to impart additional skills, if required, and test/certify the trainees in addition to the NCVT norms. They would also be responsible for admissions of the trainees as well as their placement after the training. The output parameters of the ITI could be compared with previous years as well as with the similar government ITIs.

Recently, some firms have taken the responsibility of managing ITIs in states like Haryana. For example, Maruti Udyog Limited adopted the ITIs at Gurgaon and Rohtak, Liberty Shoes Limited adopted the one at Karnal, Sona Koyo Steering Systems Limited at Nagina and Jay Bharat Maruti Limited at Faridabad. This has led to some protest too. Construction Industry Development Council (CIDC) has also started to become active in this area, with sector specific ITIs.³⁴ In Punjab, a few ITIs have been transferred to the private sector under a structured concession agreement.

INTERNATIONAL MODELS OF VOCATIONAL EDUCATION

In determining a structure for vocational education, it is important to clarify the roles of the various partners, specifically the private partner, government, the trainees, and industry. To do this, it is useful to consider international models in this field. Vocational systems can broadly be classified as a mix of two extreme models.³⁵

Enterprise-led System

This relies on enterprises to provide training to potential employees. The state provides only a system of compulsory general education. There is no formal qualification

³³ http://pib.nic.in/archieve/others/2006/may2006/2years_upa_gov_may2006/labour_emp_2years_upa_gov_may_2006.asp

³⁴ See <http://www.tribuneindia.com/2006/20060131/haryana.htm#3> and

<http://www.tribuneindia.com/2006/20060216/haryana.htm#9> and

<http://www.ciionline.org/bookshop/images/july/skills%20development.pdf> and

http://www.cidc.in/post_diploma/partner.pdf

³⁵ W.D. Greinert, 'A Comparison of the Main Types of Vocational Training Systems' in *Establishing Partnership in Technical and Vocational Education*, UNESCO Paris 1996 and the World Employment Report 1998-9. http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/14/b1/d2.pdf

system for vocational training and inter-enterprise transfer of training is largely driven by the actual work experience of the employee. Here, the critical question is the incentive for the enterprise to bear the costs of training the worker, when it is not assured that the investment in training will be recovered from the increased productivity of the worker. This system is successful in countries like Japan, where there is an expectation of a long-term relationship between the employer and employee. Otherwise, such a system introduces a free-rider character to the training process because of worker mobility in a free labour market where an enterprise benefits from the training provided by others. In such situations, training is often provided on a voluntary basis (in the United Kingdom for instance) and used as a retention strategy, whereby a worker is induced to stay by the promise of skill upgrades and consequent rise in wages.

A similar problem also arises with respect to worker certification, whereby a firm has little incentive to provide accurate information on worker skills to a competitor, forcing the system to rely on self-declaration of skills by the worker. A necessary concomitant of this system is, therefore, the need to have a flexible employment policy, where an enterprise can let go of workers, who are discovered post facto to have insufficient skills. In part due to these problems, this kind of system is now changing in countries where it was previously prevalent, such as the United Kingdom. In the UK now there is a formal certification process of vocational education (the NCVQ, a national certificate of vocational qualification).

GOVERNMENT-LED SYSTEM

This system of vocational training can take two forms:

- (i) The first is demand-driven, where the state supports training by enterprises by giving partial financial support and instituting a certification process, for instance, in East Asia. This ensures that the skill acquisition is market-driven and is especially useful in fast-growing economies. However, this system assumes that enterprises would want to invest in training their employees, a situation that would prevail if the firms operated in a competitive environment where human capital was a key resource.

- (ii) The second is supply-driven, where the state, through a system of training institutes produces a cohort of trained employees. This can work well in a stable economy with predictable demand but is subject to the limitations of public delivery.

A MIXED EXAMPLE: THE GERMAN DUAL SYSTEM

One system that has received much attention is the German dual system, which involves close cooperation between the vocational school (often supported financially and pedagogically by the government) and the enterprise where training is provided. Industry associations play a large role in determining curriculum requirements and certification processes. Here, the nature of the training is more specific, resulting in a skilled worker certificate that testifies to the qualification of the worker. Workers trained at different places are all expected to have a certain widely recognized minimum standard of technical skills.

While this system is credited widely with helping to drive German manufacturing and is generally accepted to be the desirable model, it has one serious drawback—that of excessive specialization in a particular skill. In a world where a manufacturing worker needs to be adaptive and multi-skilled, this would limit the worker’s employability. However, in practice, the initial skill determines the worker’s first job in the enterprise, following which the enterprise itself undertakes to train the worker in other skills. The bilateral structure of the labour market and the strength of the labour unions help to contribute to longer tenures and provide incentives for the enterprise to train its workers continually. As a result, Germany also has an active practice of in-service training.

Thus, the roles of the various partners in the process of skill acquisition, namely the allocation of training costs, the certification process, the development of the curriculum, and so on are inextricably tied to the features of the labour market. Table 7.11.2 provides examples of different role allocation in industrial training.

WHERE DOES THE INDIAN SYSTEM FIT?

India has elements of both systems. The ITIs and the other associated training schemes are the supply driven, state-led type of system, where the government mostly

TABLE 7.11.2
Different Role Allocations in Industrial Training

		Certification of Training		
		Employee	Industry	Government
Cost of Training	Employee	Self-taught	Standardized/proprietary certificate	Private ITCs
	Industry	Work experience	German Dual System	Apprenticeship
	Government		German Dual System	Public ITIs

determines the curriculum development and the mix of trades. The practical training provided as part of vocational education is extensive but limited to workshops in the training institute and not at an actual workplace. On the other hand, India also has a large element of market-based training by private ITCs under the rubric of a national curriculum and certification system. As noted earlier, there is not much industry input in curriculum development and in expenditure on training facilities. Indeed, it appears that much of the industry considers the training given at the ITIs to be outmoded, largely because the equipment and curriculum do not reflect current needs. However, until recently industry associations had not been active in curriculum development and trainee certification, leaving that to the central government.

Given the nature of the labour market in India at this time, it is unlikely that a Japanese style enterprise-led system can flourish. Neither has the industry generated enough confidence to repose our faith in an industry-driven system financed by the government, like, East Asia. It is true that private ITCs have emerged as a manifestation of demand-driven market based response to industrial training, but they have chosen to limit themselves to trades that need lower investment in training equipment and remain small. Thus, the most feasible route 'to produce technicians of world standard' seems to be a modified government-led model, with strong incentives for industry linkage and specific trades, or a PPP agreement with private delivery.

OBJECTIVE OF PPP

As has been described above, while there are financially self-sustaining private ITCs, these are geographically clustered, small in size, limited in their course offerings, and not structurally integrated with industry needs (though they are possibly better aligned than public ITIs).³⁶ While the existing private ITCs cannot fill the goal of improving industrial training 'to produce technicians of world standard', their experience helps in defining a clear objective for PPP in upgrading ITIs.

STRUCTURE OF THE PPP ARRANGEMENT

Based on the earlier discussion, the objective of PPP in ITIs should, therefore, be to increase private sector accountability with a view to enhancing the supply of trades

requiring a high level of capital investment in training facilities and increased linkage with industry.³⁷ An additional benefit arising out of the structure for government support suggested below is to accelerate the upgradation of ITIs faster than can be achieved with direct budgetary support. In this arrangement, the roles of the industry, government, and employees could be as follows:

- (a) The curriculum development could be undertaken by the government, as is the case now, but with greater inputs from the industry.³⁸ The curriculum development process could also allow for localization in terms of the practical training component.
- (b) The certification process would need to dovetail with curriculum development; the agency that sets the syllabus and the one in charge of the examination should be the same in order to provide consistency. The localized component may or may not be included in the common examination. Even without an examination, the incentive to learn would remain because the localization enhances employability.
- (c) The cost of training could be shared between the trainees (through user fees), the employer, and the government. As explained below, a fully user fee financed structure may not be feasible at this time.

If the cost of the training is to be shared by the government, it is necessary to detail the PPP arrangement between the government and the concessionaire and the manner of cost sharing. The existing grants-in-aid system for cost sharing is limited in its ability to provide appropriate incentives to the private sector. Specifically, the arrangement needs to address:

- (a) revenue generation system.
- (b) structure of payments from the government.
- (c) instructional and non-instructional performance parameters for the concession.
- (d) monitoring mechanism for the performance parameters and dispute resolution.

Revenue Generation

Each ITI would earn revenues through student fees and possible corporate funding. In addition, there would be payments from the government. Thus, there will be four kinds of revenue sources:

³⁶ Many private ITCs maintain a record of their placements, with a view to tapping those firms for future trainees, and to get feedback on their training needs. In contrast, few public ITIs do the same.

³⁷ For skills with a high training cost, it is particularly important to ensure that the supply of craftsmen is demand driven so that the investment in them is optimally utilized. For this, a high level of industry linkage is especially vital.

³⁸ Within the government, it can be either the central government or the state government, especially if the need for local customization is high. In India, Tamil Nadu has moved to a state certification scheme.

- (i) Student Fees, which will be regulated
- (ii) Other revenues from private sources
- (iii) Base performance payments from government³⁹
- (iv) Market-related performance payments from government

If student fees are regulated, then given the trainee capacity, the revenue from that source is determinate. One may question the need for regulating fees, since it would appear that so far, trainees have been able to afford the cost of education. However, this is partly because the private ITCs have not offered trades that had a high training cost. If a PPP arrangement were instituted to improve the quality of technicians, this would require substantial investment in training equipment in the ITIs. For this set of ITIs, full cost recovery through fees may initially be prohibitive and thus the need for regulated fees at such ITIs even under PPP.

To illustrate, assume an initial investment of Rs 40 million in an ITI, with a capacity of 500 trainees, needing 20 teachers (the number of trainees and teachers is conservatively estimated—high for trainees and low for teachers). At about Rs 200,000 per teacher, the operating and capital recovery costs of the ITI would be about Rs 11–12 million per annum. Distributed over 500 students, this would imply a tuition fee of around Rs 2000 per month. Including boarding and lodging of Rs 1000 per month, the cost to a trainee would be around Rs 72,000 for a two-year course to secure a job that initially pays about Rs 50,000 a year.

Once the employability of the ITI graduates is established, it may be possible to use the capital market (bank loans) to finance ITI education even if full cost recovery fees are charged. At such a time, the public funding could move to a scholarship system.

Other revenues from private sources could include payments for commercial services performed, such as in-service refresher courses for industry, in-company courses, machining and prototyping services, etc., as well as charitable contributions. The involvement of the private sector is expected to result in a greater variety of price-value combinations for such activities that is likely to result in higher revenue generation, as compared to public sector delivery.

The ability to retain such revenues will provide a strong incentive to the ITI to build good industry linkages. These revenues will differ based on location, e.g., it may be less in regions where there currently is little local industry (and fewer private ITCs). Creative ways need to

be found to ensure a high level of industry linkage in some of the less industrialized regions, where many public ITIs are situated. Restricting the linkage of ITIs in these regions to the locally available industry will limit their ability to deliver high value-add trades in these areas.

The structure of payments from the government is discussed in the next sub-section.

Structure of Payments from the Government

Given student fees and other revenue, there are a number of contracting possibilities for a PPP contract for ITIs, e.g.: (a) a fixed performance based annual fee, where the private concessionaire takes the risk of fluctuation in student and other fee revenues, (b) a fixed performance based fee for service with the student and other fees being collected by the government, i.e., the public sector bears the revenue risk or (c) revenue or profit sharing with respect to student fees and other revenue.

However, it is necessary to ensure that regulated student fees and base payments from the government should be so structured so as to meet only a portion of estimated normative expenses not including profit (say 75 per cent). The base payments could form the basis for the bid parameter.

The rest of the cost would need to be met from performance payments. This will provide a strong incentive to meet performance standards, while at the same time ensuring a base level of predictability with respect to revenues, which could be leveraged, if necessary. The nature of the performance parameters is discussed in the next section.

Backstop from the Central Government

This structure of deferred payments conditional on performance is the key factor that provides a strong incentive to private partners in PPP arrangements to deliver on their side of the contract, thus ensuring that the goals of public policy are met. However, the fiscally parlous nature of most state governments makes it probable that states may not be able to honour the deferred payments. To guard against this risk, central government backstop funding and involvement may be critical. This will make the contracts appear fiscally secure to potential service providers.

Performance Parameters

Usually, a performance-based contract is linked only to output parameters but in contrast to the PFI initiative in

³⁹ Base payments can also depend on some performance parameters, e.g., parameters relating to upkeep of physical facilities like the building and workshop and workshop equipments. Performance parameters would be conditional on market related performance parameters like placement.

the United Kingdom on schooling, which limited the private provision to non-teaching services, the private ITIs will also involve teaching, where it is difficult to measure output precisely. Thus, some of the parameters may reflect an input orientation, e.g., teacher qualification. Output indicators also form part of the models of PPP mentioned in the report of the Working Group on Skill Development and Training set up for preparation of the Eleventh plan. Broadly, they can be separated into two, viz. instructional and non-instructional.

Instructional Performance Parameters

Some of the instructional performance parameters will be input-oriented. Apart from teacher qualifications, these involve curricular imperatives like the number of hours of instruction, the minimum mix of practical work and classroom instruction, class sizes, etc. However, since the goal of instruction in vocational education is skill acquisition and employability an output specification needs to build on such metrics, such as:

- (i) Performance of trainees in externally administered examinations: The students currently appear for a common national examination, except in Tamil Nadu where they have the option of a state level certification.
- (ii) Percentage of trainees placed in specific kinds of firms, e.g., those with more than 50 employees (or with a gross capital of more than Rs 100 million). This provides an incentive to place students in the formal organized sector.
- (iii) Percentage of trainees who continue to be in the organized sector for a certain length of time, e.g., one year.

Item (i) can be used to condition base performance payments, while (ii) and (iii) can be used to condition market-related performance payments. The existence of such market-related parameters reinforces the ITI's incentives to strengthen linkages with industry. To meet the performance standards, the private service provider will have to network and integrate with industry to understand and anticipate their demand for skills. This will organically lead to more industry linkage and the growth of a German-like 'dual system', without a formal directive imposing industry linkage. The industry need not necessarily be geographically close, if links can be built between ITIs and distant industry clusters.

The discussion so far assumes that the ITI is focused on the organized sector. This may be presumptuous. As noted above, there is now serious consideration to designing offerings such as short term courses for the

unorganized sector. In such case, the performance metrics would need to be modified based on the goals of the system.

Non-instructional Performance Parameters

Non-instructional performance refers to services such as the physical quality of the ITI building and workshop facilities. A prime driver of performance in this case is the integration of construction and maintenance in a single contract, which provides strong incentives to the concessionaire to ensure design and physical quality of construction to avoid excessive maintenance costs in the future. The quality of the physical infrastructure and functioning of equipment could form a metric for base performance payments.

To develop market-related metrics for non-instructional performance, one can use the level of contributions from local industry for training, prototyping, and other private support to the institution, etc., which were mentioned above. Matching contributions from the government in a pre-fixed proportion can form a market-related performance parameter and encourage such revenue generation.

Monitoring of Performance and Dispute Resolution

Currently, state level certification bodies monitor the existing private ITCs. While they could continue to be responsible for measuring input parameters (and this would require capacity enhancement on their part), the output parameters such as employment and retention may need to be monitored by local industry bodies or through neutrally administered surveys. In this schema, where the base payment and the performance payments are dependent on different performance parameters, the central government may have a role to play as a guarantor.

In addition, there will be a need for a dispute resolution structure in the event of differences between the service provider and the monitoring authority. The usual practice is to have an escalating format, where the first attempt is to resolve it amicably between senior officials of both parties, then refer it to an previously agreed-upon expert or expert body and then to use arbitration before the dispute ends up in court.

CONCLUSION

This paper has outlined a PPP model that leads to immediate upgradation of ITIs, enhances the supply of trades requiring a high level of capital investment in training facilities and increases the linkage of ITIs with industry. To execute this scheme, a detailed concession document

would need to be developed, after which the private sector can be invited to upgrade groups of ITIs, using transparent selection criteria, such as bidding on the support needed from the government, which would vary depending on local conditions. In designing the scheme, the link between payment and performance is critical. Further, the structure of performance parameters needs to reflect the objective of government, for instance, the role of unorganized sector. There is still a lot of work to be done before

the concept outlined here can be used to transfer ITIs to the private sector or enable them to establish new ITIs. However, given the large potential, where almost all the proposed schemes are amenable to PPP and the importance of vocational education in supporting a move to a higher share of non-agricultural employment, adopting a structured approach may lead to better results than the apparently ad hoc approach that seems to characterize existing efforts.

ANNEXE

TABLE A7.11.1
Existing and Proposed Schemes for Eleventh Plan with Suggested Financial Outlay

S. No.	Description of Scheme	Amount (Rs Crore)	Share of Total	Cumulative Share (%)
1	Setting up of 1500 new ITIs in the blocks having no ITIs at present	7500	68.49%	68%
2	Upgradation of 400 ITIs as CoE	1500	13.70%	82%
3	Setting up of 11 ATIs	550	5.02%	87%
4	Skill Development Initiative with Public Private Partnership	545	4.98%	92%
5	Upgradation of 100 ITIs as CoE	150	1.37%	94%
6	Setting up of 12 RVTIs	120	1.10%	95%
7	Setting up of 4 Institutes for Training of Trainers	100	0.91%	96%
8	Establishment of new ITIs in NE States and Sikkim to the State of Jammu & Kashmir	75.6	0.69%	96%
9	Construction of Institute Buildings Staff Quarters and Hostel Building for Field Institute under DGE&T	50	0.46%	97%
10	One National Open School for Vocational Training having total seating capacity of around 1,50,000	40	0.37%	97%
11	Building Equipment & Establishment for 8 RVTIs⁴⁰	36	0.33%	97%
12	Setting up of an Apex Institute for Skill Building in informal sector	34	0.31%	98%
13	Strengthening of RDATs for informal sector	30	0.27%	98%
14	One NIMI in Northern India in NCR of Delhi	25	0.23%	98%
15	National Institute for skill inventory & skill building to remove mismatch	25	0.23%	98%
16	Diversification & Expansion of Vocational Training for Women	22.5	0.21%	99%
17	Setting up/Strengthening of Advanced Training Institutes⁴¹	22	0.20%	99%
18	Upgrading Training Infrastructure in DGE&T Institutes and Construction of building for CSTARI Staff	17	0.16%	99%
19	Establishment of National Instructional Media Institute, Chennai	13	0.12%	99%
20	Establishment of Directorate for Certification, Standardization and Quality Control	10	0.09%	99%
21	Establishment of National Trade Testing & Certification Authority	10	0.09%	99%
22	Setting up of National Mission for Skills	10	0.09%	99%
23	Construction of additional buildings for NVTI/RVTIs	10	0.09%	99%
24	Setting up of 4 Model Industrial Training Institutes (MITIs)	10	0.09%	100%
25	Establishment of RDATs at Hyderabad & Faridabad	8.5	0.08%	100%
26	Introduction of Hi-Tech Training	8	0.07%	100%
27	Setting up of Foremen Training Institutes at Jamshedpur and Bangalore	6	0.05%	100%
28	Participation of India in World Skills Competition	5	0.05%	100%
29	Testing and Certification of Skill of workers in Informal Sector	4.5	0.04%	100%
30	Technical Assistance Programme	3.2	0.03%	100%
31	Enhancement of RI Charges (10 to 30)	2.5	0.02%	100%
32	Media Resource Centres	2.5	0.02%	100%
33	Non-formal training for women follow-up of ILO project 'Decent Employment for NVTI/ RVTIs'	2	0.02%	100%
34	Central Project Implementation Unit (Over all Direction and Administration)	2	0.02%	100%
35	Trade Testing & Certification at DGE&T Headquarters	0.7	0.01%	100%
36	Setting up of Basic Training Centre at Kanpur	0.5	0.00%	100%
37	Strengthening of NVTs & Formation of AICVT	0.3	0.00%	100%
38	Management Information System	0.2	0.00%	100%

Source: Report of the Working Group on Skill Development and Training set up for preparation of XI Plan.

⁴⁰ These are at Kolkata, Hissar, Allahabad, Indore, Bhubhaneswar, Vadodara, Jaipur, and Tura.

⁴¹ This includes modernization and expansion of Instructor Training Programme at five ATIs and CTI, Chennai, setting up of ATI-Epi Dehradun, AVTS Phase-II and setting up of RMS Centres in six ATIs.

7.12

A PPP Model for Eco-tourism

Partha Mukhopadhyay

INTRODUCTION

The Oxford English Dictionary defines eco-tourism as ‘tourism to areas of ecological interest especially to support conservation efforts and observe wildlife’. In contrast to conventional tourism, which is often accused of being insensitive to the physical and cultural environment of the visited location, eco-tourism is concerned with the preservation of local environment and culture and the generation of local economic opportunities. Designing a public-private partnership PPP model for eco-tourism is, thus, an unconventional challenge. The Concessions Authority needs to give careful thought to a suitable concession that will define the mandate for the concessionaire, his duties, rights, and obligations. It will also not be an easy task to ensure compliance and assess whether the concessionaire is taking adequate care to minimize damage to the environment in pursuit of revenues.

COMMON STAKEHOLDER FRAMEWORK

This paper outlines a structure for PPP for eco-tourism that links it to regeneration and maintenance of wildlife habitat. The reason for linking these two activities

is that increased wildlife habitat at a location increases the attractiveness of that location for a provider of eco-tourism services. In order to make this possible, it is essential that the local community which has access to the forest, the entrepreneur, and the government come together in a common mutually agreed framework. This is schematically shown in Figure 7.12.1, which delineates the relationship between the three stakeholders.

THE PPP ARRANGEMENT

The basic idea of this contract is that the service provider/concessionaire would be able to establish an eco-friendly resort at a privileged location. It will have access to the protected area on such terms as are described in the contract, which would include, for example, building a facility at a privileged location, i.e., it would be awarded a locational monopoly. The facility need not be a permanent brick and mortar structure and indeed, in many instances it will not be. The number of visitors at any given time would be restricted. In return, the concessionaire would be obliged to fulfill certain obligations with respect to forest regeneration, community development, and concession payments.

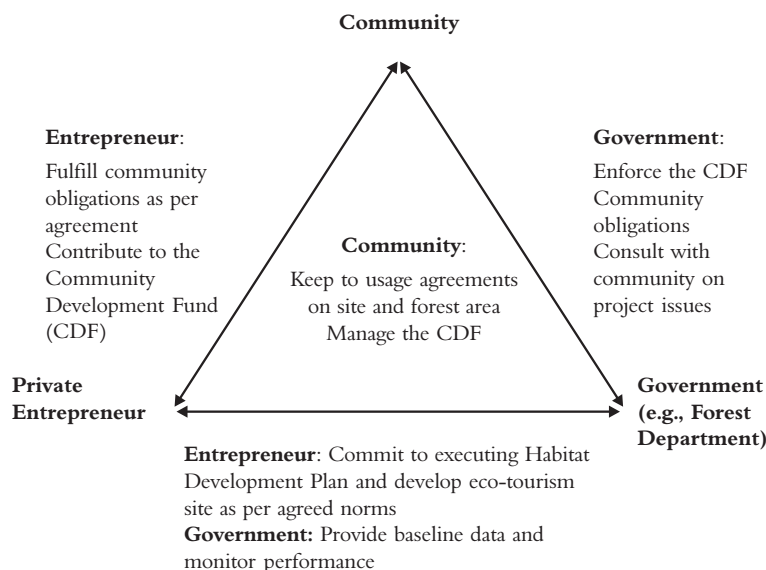


FIGURE 7.12.1: Relationship Among Stakeholders of Eco-tourism

Responsibility of the Concessing Authority

Before the concession is awarded, the Concessing Authority needs to undertake substantial preparatory work. Primary among them is to consult with the community in decision-making about the project. If there is consensus, then it needs to compile information on the local site situation and the relationship of the local community to the forest.

Site Situation Study

The Concessing Authority is responsible for maintaining biodiversity, the integrity of the forest, and protection of the wildlife in the forest. Wildlife access and management practices in the concession area are to be supervised by forest department officials. The nature of supervision for various activities, such as limits enforced on access to protected forests and the regulation of such access would be specified in the concession agreement.

To ensure that all the stakeholders begin from a common information base, the Concessing Authority is obliged to conduct a ground-level baseline study, hereafter called the Site Situation Study (SSS) to detail the existing condition of land and state of forest cover in the concession area. As part of this study, the Concessing Authority will provide potential private partners with complete zoological and botanical information about the protected area.

The Concessing Authority will also prepare a Habitat Development Plan for the designated site, which will be executed by the Concessionaire. The Concessionaire will not have permission to harvest any portion of this area. The local forest department will manage the non-timber forest produce (NTFP) from this area using Joint Forestry Management (JFM) practices in association with the local community.⁴² The Habitat Development Plan will, *inter alia*, be based on and in conformity with the Working Plan prepared by the state forest department which shall include details such as development of water bodies, mix of plant species, and so on.

Development Guidelines

The nature of development of the eco-tourism site would be restricted by site specific Development Guidelines, which shall detail aspects like:

1. Type of construction.
2. Ecological constraints, such as nature of power supply permitted, extent of water use, noise levels.
3. Ground coverage, that is, floor area ratio (FAR) limits.

4. Limits on number of visitors to the site by time of year and time of day (such as day visitors and overnight visitors) and the nature of supervision over visitors.

Community Forest Link Study

In addition to the SSS, the Concessing Authority will also need to provide a ground-level site study hereafter called the Community Forest Link Study (CFLS). Apart from the location and character of the hamlets near the location, the structured study will determine the links between the community and the forest. The CFLS will, *inter alia*:

1. Detail the needs of the local community that are met from the forest, such as fuel, Non-Timber Forest Produce (NTFP), access to water holes, grazing land.
2. Detail the extent and nature of encroachment in site area and in the forest.
3. Detail other interactions of the local community with the forest, especially social and cultural needs.

Community Development Fund

The Concessing Authority should also create an institutional mechanism for a Community Development Fund (CDF). It should facilitate management of the CDF preferably under the aegis of the Gram Sabha or if that is not possible, a participative, multi-member community welfare society. The CDF will commit to certain expenditure on basic local infrastructure, such as, power, water, health, education in matching proportion to expenditure by the state. It will also provide support for alternate livelihoods, through, for instance, a Revolving Credit Fund to be managed by the community.

Responsibility of the Service Provider

Revenue Model

The service provider will earn its revenues from the users of the eco-tourism facility. The tariff for the services provided will be at the discretion of the service provider and will not be regulated by the government. Indeed, since the number of visitors will be limited by the concession agreement, it is quite possible that the user fee for this eco-tourism facility will be quite high and affordable only to a limited segment of the population.

While this may appear iniquitous, it is not really so. Due to ecological reasons, the number of visitors would have to be limited in any case. By using financial selection criteria for such visitors (those able to pay a high user fee) rather than a random assignment (for instance by draw of

⁴² In some situations, this could also be transferred as the responsibility of the Concessionaire.

lots), this arrangement enables the generation of revenue that can then be used for other activities of wildlife and habitat management and that the benefits that accrue from them are widely shared. Furthermore, the local community also shares in the prosperity through the contributions to the CDF (see below).

Obligations

In return for the right to levy and collect fees for the use of the eco-tourism facility, the Concessionaire is required to fulfill four types of obligations, viz.:

1. *Eco-Tourism Obligations:* Build, operate, and maintain a eco-tourism resort of a specified number of units on the site to be provided by the concessioning Authority.
2. *Habitat Obligations:* Ensure that the Habitat Development Plan is executed, i.e., a designated area indicated by the Concessioning Authority, close to the location of the eco-tourism facility, has crown cover to a specified percentage, with a specified mix of species, by a specified year.
3. *Community Obligations:* Undertake specific community development activities, such as:
 - a. Making stipulated payments into the CDF including an initial corpus contribution.
 - b. Making sustainable arrangements for alternate energy sources or a sustainable source of firewood and making arrangements to meet any other needs as shall be specified in the concession document.
 - c. Making best efforts to employ local inhabitants for site activities.
4. *Financial Obligations:* Make such payments as is specified in the agreement.

Responsibility of the Community

In order to preserve the habitat, it would be necessary to manage the extent of human interaction with the area. Currently such restrictions exist, but in the absence of alternatives, the community continues to access and depend on forest resources for their livelihood. This PPP arrangement tries to address their livelihood, social and cultural requirements from the forest in a structured manner and provide alternate and sustainable sources of livelihood. It also tries to build community social, and physical capital through community-managed institutions such as the CDF and the Revolving Credit Fund. As part of its contribution, the local community is obliged to respect its agreements on the use of forest and the site area and the use of community development funds.

MODE OF SELECTION

The service provider will be selected through a two-stage competitive bidding process, namely technical pre-qualification and financial bid. All bidders who exceed a threshold technical score will be pre-qualified to submit their financial bids.

Technical Bid

The technical pre-qualification will include the financial capacity of the service provider, previous experience in operating hospitality facilities, especially in similar wildlife areas and the quality of the business plan, which shall, inter alia, detail the following:

1. Range of activities and the manner of their provision.
2. Nature of engagement with the community, based on the CFLS.
3. Overall harmony with the local environment.

Financial Bid

The concession agreement envisages that the concessionaire will make an initial pre-specified payment into the CDF. It is also required to share a pre-specified portion of its gross revenue share with the government and another pre-specified portion of its gross revenue will be paid into the CDF. In addition, it has to bear the expenses of regeneration related to the area indicated in the concession agreement. There will be no payment to the service provider from the Concessioning Authority or from any other government source for these activities.

In addition to these commitments, there will be a Financial Bid parameter, which will be a Fixed Initial Fee to be paid by the service provider to the Consolidated Fund of the State. The bidder submitting the highest Fixed Initial Fee will be the selected bidder.

MONITORING

There are two major aspects of monitoring in this arrangement. There needs to be a mechanism to ensure adherence by the concessionaire to Community responsibilities and there needs to be a mechanism to ensure adherence to Habitat Development Plan.

The first can be a local multi-member dispute resolution body with representation from the concessionaire, government and the community, such as the panchayat. The second can also be a similar multimember monitoring body with representation from technical Non-Government Organisations like World Wildlife Fund. In addition, there can be refundable performance bonds to ensure compliance with the Habitat Development Plan.

These bonds can be encashed in case the concessionaire does not fulfill its obligation to execute the Habitat Development Plan. In case of disagreement at this level, there can be a structured escalation of dispute resolution process, beginning with senior officials of the government and the concessionaire and moving to a pre-agreed arbitration panel, before any recourse to courts is taken.

OTHER APPLICATIONS OF THIS APPROACH

The approach outlined above can also be used for other similar situations, especially where community concerns are significant. For example, a similar approach could be adopted for a PPP model for industrial pulpwood plantations on wasteland or degraded forest land. Concessionaires can be given the right to use designated revenue forest land or wasteland for pulpwood plantations in return for undertaking to regenerate degraded forest land. While such projects, due to their longer gestation periods, are not usually considered to be amenable to a PPP model, there is scope of utilizing private sector efficiencies in investment, planting, and maintaining of forests if a proper concession agreement is drawn and competitive bidding used to award the contract. This model can also be adapted for biofuel plantations like jatropha, pongamia (karanja), and other non-edible oil bearing trees as well.

As in the eco-tourism model, the Concessioning Authority would be required to prepare an SSS and CFLS and a Working Plan delineating the technical parameters of the forest regeneration activity to be undertaken, if any. Similarly, the concessionaire would have similar community obligations to be monitored in a similar manner. In contrast to the eco-tourism model, however, it is possible that a larger number of local community people can find employment or otherwise participate in the plantation programme. Indeed, it is possible that such arrangements will be entered into not only with corporate entities but also with co-operatives of local residents. Monitoring arrangements similar to the eco-tourism model can also, *mutatis mutandis*, be put in place for this purpose.

In such an arrangement, the appropriate authority, such as the Forest Department or the Forest Development Corporation of a state may offer a contract for pulpwood farming to a pre-qualified entity. The concessionaire, selected through a competitive bidding process, should have substantial experience in forest development and industrial plantation. The Concessionaire would be allowed develop an identified site indicated by the Forest

Department for industrial plantation activities, subject to the contours of the Forest Department's working plan for that area. The contract obligation for a specified number of years would extend over multiple plantation cycles. The Concessionaire can be given the obligation of leaving a standing forest at the end of the contract period.⁴³

Specifically, within the scope of the contract, as in the earlier agreement, the Concessionaire would, in addition to making such payments as is specified in the agreement and adhering to community obligations similar to that in the eco-tourism example, be required to:

- a) plant the designated area with such species of pulpwood and at such density as mutually agreed in the concession agreement;
- b) harvest the designated area as per the terms of the agreement;
- c) ensure that the designated area is left with the percentage crown cover specified in the contract at the end of the concession period; and make certain that this standing forest consists of the exact mix of species agreed to previously;
- d) employ JFM practices with the participation of the local community as well as the client, who, in this case, would be the state forest department, for harvesting of NTFP generated by the industrial plantation.

The concessionaire would also be expected to adopt measures to ensure that protected forest area in the vicinity is not affected by the industrial plantation by, *inter alia*:

- a) monitoring bio-diversity effects and incidence of diseases as also effectiveness of disease control measures;
- b) maintaining a fire buffer between the plantation and such areas;
- c) co-operating fully during periodic as well as random inspections specified in the concession agreement on items such as (i) monitoring of spacing of saplings as well as mix of species; and (ii) testing for negative impact on land fertility and the water table.⁴⁴

The revenues of the concessionaire would consist of revenues from the sale of timber and any other NTFP as may be detailed in the agreement. The price for the sale of timber would be left to the discretion of the concessionaire and would not be regulated. The concessionaire would also have the right to enter into long-term contracts for the sale of timber but the rates for such long terms sales would need prior approval of the client. To protect against

⁴³ This implies that the Concessionaire would essentially have to agree to invest during the final cycle without the right to harvest the pulpwood.

⁴⁴ The testing can be outsourced to a mutually agreed agency.

sales at below-market rates,⁴⁵ the client, i.e., the government department could be given the right to offer to buy the timber or NTFP at a price that is at some premium to the concessionaire's reported price. This precaution would be necessary in contracts where the concessionaire is entering into a revenue sharing agreement with the community and the Forest Department. Such a clause would perhaps not be relevant in case the concession agreement is based on pre-specified payments rather than revenue sharing. The concessionaire would receive no payment from either the concerned forest department or any other government source upon entering into the contract.

CONCLUSION

This paper outlines a structure for public private partnership (PPP) for situations where the entrepreneur, the government, and the local community which has access to the forest, need to come together in a common mutually

agreed framework for regeneration and maintenance of wildlife habitat or other activities such as commercial forestry. Usually, in such situations, there is considerable friction between the various stakeholders, especially the local community. The structured approach outlined here makes a special effort to involve the community in the process and share the benefits with them in a manner designed to enhance community social and physical capital. Thampi (2005) describes how some of these principles have been used with success in local initiatives in places such as the Periyar sanctuary.⁴⁶

As shown here, the model can be adapted for use in various other similar situations where environmental and community considerations are significant. This is especially significant given the current drive for biofuel plantations, industrial pulpwood, etc. In all these cases, there is considerable scope to leverage the private sector's managerial efficiency without jeopardizing the physical or social environment.

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⁴⁵ The issue is similar to arrangements in exploration contracts for natural resources like oil, gas, coal, and others.

⁴⁶ Thampi, Josh, Ecotourism in Kerala, India: Lessons from the Eco-Development Project in Periyar Tiger Reserve, Nr.13, June 2005. *ECOCLUB.com* E-Paper Series, Nr. 13, June 2005.