Enabling Market Access For Urban Local Bodies in India

(Modified Pooled Financing Mechanism)

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1. Introduction

The term infrastructure refers to the capital required to produce economic services from utilities such as power, telecom and transport among others. They are central to all economic activity. Good infrastructure provides key economic services efficiently, improves the economy's competitiveness, and generates high productivity and supports strong economic growth. On the other hand poor infrastructure can significantly impede economic growth and be a substantial drain on the economy's resources.

1.2 Indian Infrastructure

The India Infrastructure report brought out by the expert group on the commercialisation of Infrastructure Projects in 1996 had for the first time done an in-depth review of the infrastructure sector in India. The report estimated total investment requirements for infrastructure at about $ 25 bn each year during the period 1996-2001 and a higher $ 43 bn each year during the period 2001-2006. Recently the government has pegged investment requirements for the economy at $320 bn for the period 2007-2011. Until the mid 80s, most developing countries including India relied on Public sector to finance and operate their infrastructure. The results of such dependencies were quite disappointing. Our budgetary resources can not support such huge investment. Given the resource constraint at the government level, increasing the scope of private participation coupled with a higher participation from market resources has become inevitable.

1.3 Why Urban Infrastructure

This paper discusses the issue of reviving the decaying urban infrastructure in an inclusive manner. This segment of infrastructure has gained importance on account of the urban population pressures straining the existing services. The result is the poor coverage of urban services directly impacting the standards of living of the population. Calling the

situation 'grim', the India Infrastructure Report – 1996' had pointed out that infrastructure bottlenecks are likely to pose serious impediments in enhancing urban productivity. To provide basic services to the expanding urban populace, the investment needs are large. Additionally the investment required for taking care of backlog, and O&M are colossal. The total investment required for water supply, sanitation and roads till 2006 is estimated at Rs. 2.3 billion, or an annual investment of Rs. 277.7 million. More related details about the urban sector are presented below.

1.4 Predominance of Urban Sector

India has witnessed rapid strides in urbanization as can be seen in the explosion of large cities. Contrary to popular concepts of a predominantly rural India, an increasingly larger percentage of Indian population lives in the urban areas. "With urban infrastructure, we have not even begun. The crisis is bigger than meets the eye, because contrary to popular perceptions. India is neither a primarily rural nor a primarily agricultural economy". (See, Vijay Kelkar). This is evident both from the shares in GDP and population densities. While the share of agriculture in GDP is about 20% it is 80% from the non-agriculture sector.

The urban/rural population densities also do not reveal a particularly rural economy. The population density in the 'urban sprawl' outside many towns, (and outside the official administrative definition), is many times higher than rural population densities. An occupational distribution of earners also dispels the rural story. According to the Indian Retirement, Earnings and Savings (IRES) database, of the total earners, 30% are in agriculture, 25% in small firms, 29% self-employed, 9.7% in government and 6.3% in big firms. This picture is inconsistent with the popular belief that a dominant fraction of India's population practices agriculture.

These facts suggest that in thinking about India in the future with a view to accelerating growth we need to focus on non-agricultural sources of livelihood in 500 cities. India's growth will come out of focusing on urban production of industry and services. This can only happen with a supporting sound urban infrastructure in these 500 cities, and particularly in the 20 megapolises.

Urban poverty was lower than rural poverty by at least six percentage points in the 1970s and early 1980s. Currently, it is at a par with or marginally below rural poverty. Also, the rate of unemployment in urban areas is higher than that in rural areas, both for males and females. Economic differentials between urban and rural poor have, thus, narrowed down, and consequently there is no basis for the stipulation that urban growth will accelerate in future years. (See, Kundu 2001)

1.5 Urban Local Bodies (ULBs)

There are more than 5000 census urban areas in the country, whereas the urban areas organized in any of the form of urban corporatised entities are over 3700, classified in109 municipal corporations, 1432 municipal councils and over 2100 Nagar Panchayats (city rural bodies).

1.6 Urban Service Coverage

Urban service levels e.g., water supply, sewerage, solid waste disposal, citywide roads, and street lighting continue to be in an unsatisfactory state. According to the National Sample Survey, 59 per cent of urban households are connected to a private tap and others, i.e., 41 per cent of the total urban households rely on public or shared connections. Only about 30 per cent of houses in cities and towns are connected to sewerage and sewage disposal services. Nearly 20-25 per cent of the total garbage remain uncollected from roads and streets. City-wide road network is in a dilapidated state, and unable to absorb the fast growing traffic load. Street lighting is grossly insufficient to provide security to urban residents.

The responsibility of local service delivery has been assigned to the ULBs. An important development in this regard was the passage of the 74th constitutional amendment, which called for devolution of revenue powers to the local bodies to enable them to perform their functions. However there has been little movement in the devolution of powers from the higher levels of government although the functional responsibility of service delivery has been clearly assigned.

In such a scenario the urban local bodies to a large extent still depend on the funds flow from the centre and state government. In the situation of a resource crunch at the higher levels of government the resource position of the ULBs becomes more uncertain and precarious. This has a direct bearing among other factors on the deterioration of urban services.

The result has been increasing pressure on the thin capacity of existing services. While cities are the engines of growth in terms of share in output and employment, their future prospects are at risk unless the services are rapidly improved leading to a better quality of life.

1.7 Finances of ULBs

The responsibility of urban services rests with the ULBs with no clear financing avenues. The state of municipal finances is weak and a cause for concern. It is as yet not possible to infer the consolidated national picture on account of great diversity across states. The taxation resources of the municipalities are very meager as most of the local taxes are also levied and collected by the states. One principal and buoyant source of revenue, namely, octroi has been generally abolished barring few states like Maharashtra, Orissa, and Manipur. Other local taxes such as Profession tax, entertainment and advertisement taxes are also mostly levied and collected by the state governments with a fractional devolvement to the municipalities. Currently Property tax is the only major source of tax revenues for ULBs. Hence financing infrastructure through internal accruals remains a difficult possibility without large scale effective governance reforms at the state level.

1.8 Capital Market Access

We would like to suggest that the ULBs need to access the capital markets. This should not be very difficult considering that India has a long established history of capital market activity. In our financial markets, it is not just the private sector but the government, mainly the centre and also some states who are active participants. We have tried to explore the possibility of the ULB - technically the third layer of government to

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access the capital markets. Internationally too, many local governments are active borrowers in the financial markets.

Across the world governments at all levels are accessing capital markets for their resources requirements. In India we notice this trend at the level of the central and state government, who are the biggest borrowers on the Indian capital market. The local governments however, are still largely dependant on transfers of resources from the higher levels of government. As resources get scarcer, the urban city services have sharply deteriorated. This calls for large investments not just in new infrastructure but also for maintenance of the existing networks. The solution is to find mechanisms of encouraging the ULBs to access capital market funds. The larger local bodies with defined financials will find it easier to access the markets, but India is home to a large number of smaller ULBs. Alternatives thus need to be devised for the larger segment of ULBs which cannot raise market funds on a non-recourse basis. At the same time there is a need to bring in market dynamics without guarantees from the higher levels of government.

The need for ULBs to raise funds in the market and borrow from banks in a sustainable manner is beyond doubt. Their large need for investments to augment and improve services, the long life of these investments, and investment lumpiness means that debt of municipalities would be large relative to their revenue streams from the assets that provide these services. In India, financial liberalization offers an opportunity for municipalities to use the route of markets and bank borrowings. Both phenomena have begun but remain very small. Crucial institutional, legislative, design (of investments), and regulatory initiatives would be necessary before the market can really take off. This of course presumes that ULBs are able to substantially raise their revenues through efficiency in taxation, cost based user fees, and save costs through operational efficiency. Here we look at the financial side of the process.

1.9 Broad Funding Choices

To finance infrastructure a number of options exist depending on the ownership/operation model selected. The broad choice is between public sector and

private sector funding. Public sector funding can be made from the following sources: government budget, Overseas aid (for developing countries), borrowing through specialised banks or agencies, domestic capital markets, and international capital markets. In some cases repayment of the funds does not depend on the success of the project, lenders do not carry any project risk and their investments are backed by government guarantees.

1.10 Funds Gap and the Capital Market

The gap in required funds for urban infrastructure projects has been discussed in the five-year plans. To quote from the 10th five-year plan "Urban infrastructure cannot be funded by budgetary support alone. While market borrowings are not yet a viable source of financing for urban infrastructure in most instances, a beginning has to be made for building up creditworthiness in ULBs. If this cannot be done for ULBs as a whole, then it should be attempted at least for individual sectors such as water supply, and wherever else user charges and the general resource position makes for it feasible to use debt funds to supplement grants or own resources". The recent policy directive from the RBI, expanding the coverage of infrastructure lending by banks to include some segments of urban infrastructure projects will provide a much needed shot in the arm for banks to take exposures in this sector either through direct lending or bonds.

1.11 Pooled Financing

Another method of funding being advocated is pooled financing. While, only financially strong, large municipal corporations are in a position to directly access capital markets, most small and medium ULBs are not able to access capital markets simply on the strength of their balance sheets. The cost of the transaction is a significant barrier. In the United States and elsewhere, small local bodies can pool their resources and jointly access the capital market. The Government of India, decided to create a similar vehicle that enables capital investments to be pooled under one borrowing umbrella. The Pooled financing works because of the value addition through 'portfolio diversification' and because monitoring costs to the retail investments are reduced when carried out appropriately.

Government launched a Pooled Finance Development fund (PFDF) to enable smaller municipalities to look for alternative sources of funding for their bankable infrastructure projects/schemes. This scheme is expected to provide credit enhancement to access market borrowings on a creditworthy basis and facilitate introduction of necessary urban sector reform and development of Municipal Bond market.

Each state/UT will designate either an existing state entity or create a new entity for execution of the scheme. The Central Government would support SPFE (State Pooled Finance Entity) through the Pooled Finance Development Fund. A token provision of Rs. 50 lakh had been proposed in 2003-04. Of the funds available with the Central Government for PFDF, 25% would be utilized for assistance for reforming the municipalities/ULBs so as to increase their creditworthiness and the balance 75% would be utilized for contribution to the Debt Service Reserve Fund (DSRF).

It may be noted that traditionally majority of urban infrastructure projects are financed by state governments with support from institutions like LIC, HUDCO, etc. Now with the declining availability of state finance and Reserve Bank of India's endeavor to streamline lending against state guarantees, flow of funds to infrastructure project of Urban Local Bodies has diminished. Pooled finance scheme is expected to address this problem.

A tentative allocation of Rs.400 crore under the 10th Five Year Plan has been made for the Scheme. A budget provision of Rs.50.00 crore has been made for 2006-07.

1.11.1 Case Study – Pooled Finance

An important case study is that of TNUDF which raised Rs. 30.4 crore on behalf of the 14 municipalities in Tamil Nadu through the Pooled Financing mechanism. It is the only issue of its kind in Asia and internationally it is being cited as a successful model for a replicable case study. For the purpose a SPV 'Water & Sanitation Pooled Fund' (WSPF) was set up to issue the bonds. The issue proceeds would finance small water and sanitation projects in 14 locales. The bonds have a face value of Rs. 1 lakh each, 9.2% annual interest rate, 15-year maturity, and redemption in 15 equal annual installments, and are puttable/callable at the end of 10 years.

This is the first municipal issue in India with a 15-year maturity. While the bonds were unsecured, a multi-layered credit enhancement mechanism was set up. The ULBs were to set apart monthly payments equal to one-ninth of their annual payment into escrow accounts they hold, and transfer the same during the tenth month into the WSPFs escrow account. If the ULB payments were insufficient, the WSPF may withdraw funds from ULB bank accounts where tax collections are remitted and or directly intercept state transfer payments. The second charge is the creation of a 'Bond Service Fund (BSF)'; a state funded Rs. 6.9 crore-reserve fund (equal to about one and a half times annual debt service) set up before the bond issue, would then be tapped. This fund would be liquid securities held by WSPF. The third level of security would be a USAID guarantee of 50% of the bonds principal through DCA to replenish the BSF if needed. The issue was privately placed (Table 1).

Table: 1

Private Placement of the TNUDF Pooled financing Bond Issue

Subscriber	Amount (Rs. crore)
Karnataka Bank	20.0
ICICI Bank	10.0
City Union Bank	.25
Guj. Industries power co. Ltd. PF	.11
Metlife Insurance PF	.05
Total	30.41

Source: Project Note No. 31, May 2003, Indo-US FIRE (D)

Besides the strong escrow mechanism with government guarantee, a key to its success was that all projects pooled demonstrated collection of user charges and or fixed fees from citizens. The majority of the proceeds were disbursed to ULBs in January 2003, in the range of Rs. 16 lakhs to Rs. 547 lakhs. Most are using these proceeds to refinance TNUDF loans at lower interest rates.

1.11.2 Learnings'

This issue has been important for a variety of reasons. It has demonstrated a successful model of pooled financing in India. It has thrown open the possibility of enabling smaller municipalities to access capital market funds at competitive rates. The

14 ULBs forming a pool had an incentive to come together. For the ULBs in the pool having a positive net owned income the incentive was to get funds at 9.20 % as against their earlier borrowing at 12%. Also their requirement in terms of size was not large enough to access the markets on their own. The ULBs with negative net owned income had an incentive to join the pool on the strength of their project revenues than their general revenue account as this was the only mechanism allowing them access to market funds at competitive rates. As a beginning this model is a landmark in initiating the smaller ULBs to capital market funding. However, in the strict sense of the term this model would not comply with a market based mechanism of raising capital market funds. This is on account of the government guarantee as well as the USAID contribution in the escrow mechanism that provided a strong credit enhancement. As an interim measure this model is appropriate till the ULBs develop market rigor and discipline and are able to attract market funds on their inherent strength.

1.11.3 Evolving a New Pooled Finance Structure

We are advocating the application of a pooled finance mechanism for ULB funding without state support or guarantees. This is based entirely on the concept of risk sharing – portfolio approach, economies of scale and obligation to development. As a test case this concept has been applied to a random group of ULBs in Maharashtra, both contiguous and non-contiguous. The so called 'virtual grouping' has made them more bankable than on a stand alone basis.

In the normal course, the principal requirement of private sector funding would be bankable projects, well structured to provide good debt servicing. Doubts arise about the ability of the local bodies as they exist today to have this capacity. Barring the large cities/corporations which would be able to operate as a corporate, the large number of smaller local bodies are ill equipped to handle market funds. In such a scenario the international experience of bond banks and pooled finance becomes important. This has been experimented with success in the developed countries and mainly in the USA.

The modified pooled financing has been lucidly illustrated in a paper by Pethe and Lalvani (2006). The paper has demonstrated that within the available financial data

for ULBs in Maharashtra, it is possible to differentiate and group the ULBs in ways that improve their overall financial position.

The scheme that we would like to suggest would extend the existing concept and would work without the state acting as an intermediary or the creation of any new institution. It is possible for the existing financial institutions to participate with enabling legal and regulatory provisions. The scheme would provide incentives for not only the best of the ULBs to come together and access the capital market, but also demonstrates that strong and relatively weak ULBs too could come together to obtain a credit rating as a 'Virtual' Entity. Needless to say that such a coalition would emerge only if it gives to each partner at least as much as it would have got if it had independently accessed the market, i.e., that the standard imputation conditions apply. The scheme proposed here shows that such incentives could indeed be built into the system.

1.11.4 Theoretical background of Modified Pooled Finance

We first consider the space of ULBs as our universe. This set will need to be partitioned in three sub-classes, viz., one that has ULBs that are 'good' then those that are not very good but have some redeeming features and finally those ULBs that are – in a sense – beyond repairs. In order to rank the ULBs there would be a set of criteria that provide the filter for such a categorization. Formally therefore we have the following:

- As the first stage filter we use Per Capita Revenue Surplus. All ULBs with a revenue surplus gives us the first of these classes viz., U(I) whom we shall denote as "CHERRIES".
- Within the category U(I) we could use some stricter criteria and obtain a subset which denote as "SUPER-CHERRIES". This is simply an illustrative mechanism of picking the Best of the Best. This is strictly not essential to our argument.
- All the ULBs recording a Per Capita Revenue Deficit define a joint set of $\{U(II) \cup U(III)\}$.
- To distinguish U(II) from U(III) we make use of second stage filtering strategy. In our exercise we have identified three criteria for this purpose, which we discuss later in the paper.

- We then define a benchmark for each of these criteria and from {U(II) ∪ U(III)} we identify U(II) as being those which pass the test for at least one criterion. The U(II) group is then 'Best amongst the Worst' and are termed as "SALVAGABLES".

- All the revenue deficit ULBs which fail the test for all three criteria are the U(III) group and are termed as "DUDS". The ULBs in this category need direct intervention and/or support by the state to strengthen them enough and till such time that they are able to manage market dynamics on their own.

1.11.5 Partitioning of ULBs

To recap what we have discussed, is a partitioned universe of ULBs with each ULB being ranked on the basis of certain criteria and then partitioning them into three mutually exclusive and exhaustive subsets viz., the 'Cherries', the 'Salvageables' and the 'Duds'. In the Western model, the Financial institutions will look at only the Cherries as they alone will have the required 'rating' based on the bank-ability of the projects and the credit risk of the institution for the purposes of getting loans or issuing debt. Whilst this is the 'safe' and 'prudent' way, given our situation and the developmental agenda, this is clearly not enough. Thus such a narrow approach will not do in a developing country like India as the extent of 'Cherries' may not be sufficiently dense. There is hence a need to extend the concept of pooled fund banks so that even some of the 'relatively good' laggards enjoy the benefits of development and we are able to make a dent on the serious problem of urban amenities/services.

We now turn to illustrations with the help of data related to ULBs in Maharashtra. Undeniably, such an exercise is slightly 'futuristic' in that several preconditions have to be met:

1) There is the intangible but crucial matter of mind set change so far as all the parties are concerned.

2) Legal/regulatory changes of an enabling nature need to be addressed (including granting the status of government paper with concomitant tax concessions to the ULB bonds and allowing ULBs to close suitable contract amongst each other and with the funding/underwriting agency).

3) The existence of a thriving secondary market (and not just IPO which already exists) for muni-bonds.

1.11.6 Virtual Groups of ULBs

Our empirical illustration tries to demonstrate the following cases:

Case 1: U_1, $U_2 \in U(I)$ come together to form a virtual entity V_1 such that NPV$(V_1) = \alpha$. We then have to argue why such a coalition formation is feasible and utility enhancing at the aggregative level as well as at the micro level for all concerned (imputation problem). Case 2: We illustrate the formation of the virtual entity V_2 made up of U_1 and U_2, where $U_1 \in U(I)$ and $U_2 \in U(II)$ and consider the same problem as in the earlier case. This case is particularly important in that it represents a cross over possibility, underscoring the development argument for 'conceptual extension' made earlier in the paper.

It needs to be argued why such coalitions provide incentives for intra-contract. Various arguments have to be made based on scale and portfolio principles. There are also reasons based on technology and contiguity and arbitrage. It is quite well known – from elementary finance literature – that through construction of portfolio the risk associated with the portfolio is pegged at a level that is less than the weighted sum of the individual risks of the components that go to make up the portfolio. In standard symbols this can be formally written as: $\sigma \ (V_1) < w_1 \ \sigma \ (U_1) + w_2 \ \sigma \ (U_2)$. The implication, in our case is that the virtual entities will be able to get access to credit/bonds at easier terms than individually. Thus when both the ULBs coming together are strong, there is still an incentive for them to come together. But more pertinently, even when one of them is weak – due to high risk associated – there may be a case for them to come together when the composite risk is acceptable for the purposes of credit disbursement i.e., $\sigma \ (V_1) < \alpha$ and $\alpha < \sigma \ (U_2)$, where α is the acceptable level of risk for lending or debt issue. Here of course the imputation problem becomes crucial for creating an incentive for the stronger ULB to join the coalition.

In both the cases mentioned above, all the concerned parties in a Pareto improving way may form the entity through bargaining and contract setting. The other aspect has to do with the fact that there are overheads involved in the process of incurring debt, with the obvious implication that going for large loans or bond issue will be rather more cost

effective, after all the cost argument of the supply function of loans or bonds is, ceterus paribus, monotonically inversely related to the quantum involved, as certain costs are fixed. These and other scale economies provide an important economic rationale for going in for collusion between ULBs. The scale economies can also be rationalized from technological angle in fairly obvious way. The argument of spatial contiguity will depend on the particularities of the specific projects involved (discussed later). All this of course presumes that there is a possibility (enabled by regulatory/legislative) of reaping arbitrage gains. We now turn to empirical illustrations.

Benchmarks:
- Having explained the three criteria we need to define a benchmark of acceptability for each of them (Table:2). For illustrative purposes we defined benchmark for these criteria as the actual average values for each of these criteria in case of the 'Cherries'. This benchmark admittedly suffers from the obvious limitations of a mean statistic, and hence could perhaps be appropriately fine-tuned. Specifically, the benchmarks obtained for each of these criteria are:

Table: 2 - Benchmark for Identifying U(II)

(Average of 90 Cherries)		
DR	**ADMIN /TE**	**PUG/TE**
55	33	28

Note: A sample of 238 municipalities in Maharashtra was considered for FY 2001. This excluded Jalna district and Mumbai. Based on the criteria of Net Revenue Surplus, 90 ULBs were identified as 'cherries'. The above benchmarks are the averages of the group of cherries.

1) **DR** is Dependency ratio. Calculated as (Total Exp-own Income)/Total Expenditure
2) **ADMIN/TE** is the ratio of administrative expenditure/total Expenditure
3) **PUG/TE** is the ratio of expenditure on public goods/Total Expenditure. Public goods expenditure includes education, sanitation, fire brigade, water supply, roads, and street lighting.

All the ULBs which passed the test in at least one of these criteria are identified as elements of U(II) or the "Salvageables" i.e.

1) (DR) < 55 (lower the dependency ratio, better the ULB performance)

2) (ADMIN/TE) < 33 (lower the expenditure on administrative services, better the ULB performance)

3) (PUG/TE) > 28 (Higher the expenditure on public goods, better the ULB)

1.12 Model Case - The Water Story

The water sector is being used as a model case for explaining the possibility of contiguous ULBs grouping together to derive value through capital market funding. The water sector is unique and hence is a good case study for application of the model of pooled finance. In India, water is a state subject, involving a number of agencies and ministries with overlapping responsibilities.

We are looking at the possibility of creating a virtual entity for water financing. The argument gets further strengthened in the light of the 'aggregation' experience internationally in the water sector, as discussed later.

1.12.1 Background - The Problems of Financing Water Projects

The profile of urban water investment projects typically involves a high initial capital outlay, followed by a very long payback period from long-lived assets. As a result, the risk of repayment default is high relative to many other projects. In many developing countries, borrowing in local currency is only available at short maturities that do not match the long-term financing needs of water projects. When countries borrow in foreign currency, they must repay the debt using revenues generated in the local currency. There are a number of examples where an unfavourable movement in the exchange rate has triggered payment default in water projects. (Financing water and Environmental infrastructure for all – Background Paper No. 6, Submitted by the Organization for Economic Cooperation and Development).

1.12.2 Case Studies

Seven case studies were carefully selected as representative of (a) the great diversity of aggregation models to be found around the world and (b) the three categories of aggregation processes that had been identified (Figure: 1). Such aggregated structures can vary widely, and generally along three dimensions such as:

- **Scale:** Aggregated structures can group two neighboring municipalities, or several municipalities in a single region or across a broader territory.

- **Scope:** Aggregated structures can provide a single service (for example, bulk water supply) or all services, from raw water abstraction to sewerage treatment. For each of these services, they may carry out certain functions only (such as procurement) or be responsible for all functions, from operations and maintenance to investment and financing.

- **Process:** Municipalities may form aggregated structures voluntarily based on mutual interests, or, alternatively, a higher level of government, driven by the overall public interest, may impose or incentivize the aggregation process. The aggregation may be temporary (for a short-term specific purpose) or permanent. The main driver for aggregation is usually the potential to realize economies of scale by providing services to a larger customer base and therefore to render services more efficiently and at a lower cost. Despite the case for aggregation being relatively easy to construct, aggregation does not take place as often as one may think, and it has a relatively high risk of failure because political will is lacking, the potential benefits are not clearly understood, or the aggregation process is perceived as too complex.

The three categories of aggregation processes that had been identified are:

- **Voluntary**, which means that local governments took the initiative to aggregate their water and sanitation services based on an analysis of the advantages and disadvantages of aggregation at their level, as in France and the Philippines.

- **Voluntary with Incentives**, carried out at the local level, but with incentives provided by a higher level of government, as in Hungary and, to a lesser extent, in Brazil.

- **Mandated** by a higher level of government in spite of local resistance, as in Italy, the Netherlands (although implementation was left to the regions and was relatively slow), and England and Wales, which had the strongest mandated aggregation.

1.12.3 Factors Driving Aggregation

- Increased efficiency through economies of scale
- Enhanced professional capacity in larger scale of operation
- Access to water resources and integrated water resources management
- Broader decentralization processes
- Access to finance or to private sector participation or both through improved risk mitigation or acceptable risk for exposure
- Cost sharing between higher- and lower-cost service areas.

Fig: 1 Dimensions of Aggregation Models
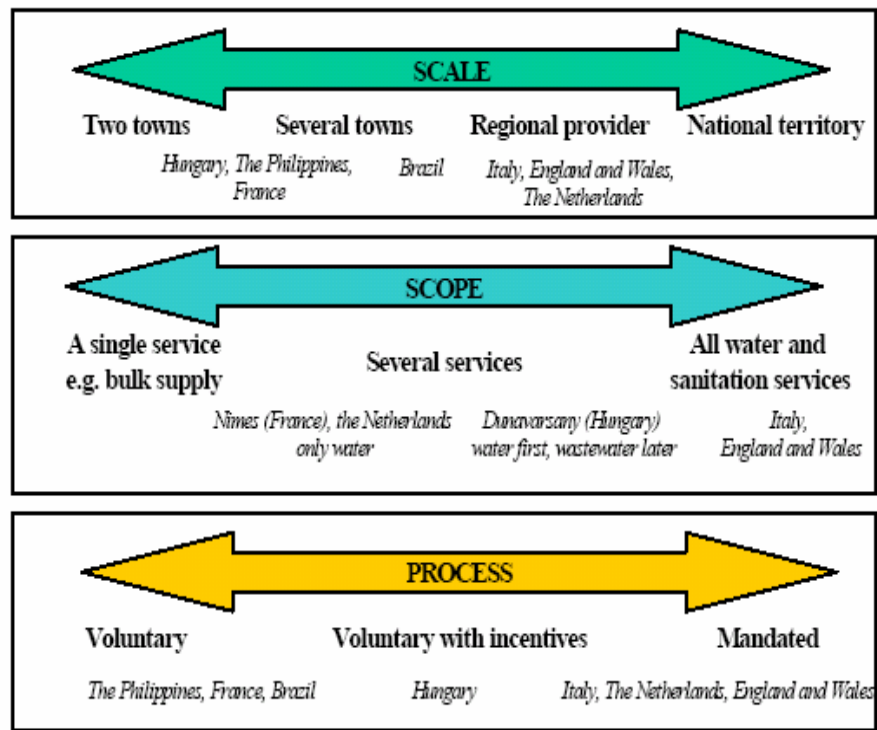
1.12.4 Empirical Testing of the Aggregation Model – An illustration

The district of Ahmednagar was selected on a random basis for the testing of the concept of aggregation of ULBs for a water supply system. Ahmednagar being a Drought prone district was a good sample to test the aggregation model for water supply.

As discussed earlier a water supply project requires grouping of ULBs as these are often large projects. It is also a core service and hence the strongest public good. At the same time the water sector services can be quantifiable as the end user can be identified. This can permit realistic user charges, which in turn can attract private participation.

Data was collated for nine of the ULBs in the district. This included 2 cherries with positive revenue surplus, 3 salvageable ULBs which met at least one benchmark of inclusion and 4 dud ULBs which did not have a single qualifying criteria. Only 2 of the ULBs had positive per capita income. (Table:3). Strictly on income and repayment criteria, it would mean that except for the 'cherries' the other ULBs would not be able to

meet the requirements of the market on an individual basis. To take the argument further it would mean that these ULBs would have to solely rely on transfers of funds from the higher levels of government for their core services.

Table: 3 – ULBs in Ahmednagar District of Maharashtra (Qualifying Ratios)

ULB	ULB Class (Census 2001)	Classify- cation	ADMIN	PUG	DR	RS/TE	Overall Rank in Maharas- htra	Income Rs. Per Capita
Ahemadnagar	E	dud	54.48	25.14	63.76	-9.48	*115*	-26.30
Deolali Pravara	C	cherry	28.16	9.22	54.19	3.12	*86*	17.01
Kopargaon	B	salva	60.45	35.71	54.01	-126.31	*233*	-757.31
Pathardi	C	cherry	51.97	22.84	74.01	19.41	*45*	5.70
Rahata Pimpalas	C	dud	36.20	17.55	73.27	-26.70	*157*	-6.38
Rahuri	C	dud	55.11	14.77	64.41	-11.36	*124*	-121.00
Sangamner	B	dud	46.05	23.66	55.21	-23.79	*152*	-1055.72
Shrigonda	C	salva	34.03	38.08	51.76	-56.69	*210*	-294.52
Shrirampur	B	salva	51.53	24.05	1.47	-35.65	*174*	-54.29

Note: Figures in 'red' denote those meeting the benchmarks.
     Salva refers to salvageable

To analyse their status in the 'pooled framework', we made a 'virtual aggregation' of the nine ULBs. The aggregation of these nine ULBs too did not create a viable 'virtual entity' on any of the parameters. (Table:4). In case of NPV, which would be the basis for capital market funding, the positive NPVs of the 2 ULBs namely, Deolali and Pathardi was completely outnumbered by the negative NPVs of the balance 7 ULBs. In case of the other qualifying benchmarks, namely, Dependency Ratio, Administrative expenditure to total expenditure and expenditure on public goods to total expenditure the virtual entity was disqualified on all 3 criteria. More combinations of these ULBs could be attempted to create a viable virtual entity.

Table: 4– Virtual Pool of ULBs in Ahmednagar District of Maharashtra (Rs. Lakhs)

ULB	ULB Class (Census 2001)	Classifi-cation	Revenue Surplus	Total Exp.	Admin Exp.	PUG Exp.	Own Income	NPV
Ahmadnagar	E	dud	-23252	2452.1	1335.92	616.43	888.66	-79183
Deolali Pravara	C	cherry	592	189.73	53.42	17.49	86.92	2016
Kopargaon	B	salva	-37370	295.85	178.85	105.66	136.06	-127261
Pathardi	C	cherry	1945	100.19	52.07	22.88	26.04	6624
Rahata Pimpalas	C	dud	-2746	102.84	37.23	18.05	27.49	-9351
Rahuri	C	dud	-3029	266.69	146.97	39.39	94.91	-10315
Sangamner	B	dud	-11084	466	214.61	110.26	208.72	-37746
Shrigonda	C	salva	-5003	88.25	30.03	33.61	42.57	-17037
Shrirampur	B	salva	-28247	792.34	294.81	137.83	389.88	-96193
Total			**-108194**	**4753.99**	**2343.91**	**1101.6**	**1901.25**	-368446

Virtual Entity Ratio		Benchmark
DR	60	55
ADMIN	49	33
PUG	23	28

In the above example the sector was water, which belongs to core services as well as 'public good'. At the same time it is a marketable commodity with the possibility of appropriate 'user charges' and hence private participation. Yet, this sector has had limited private sector participation even internationally on account of its peculiar characteristics. In such a situation, aggregation would have to be mandated by the higher levels of government. Alternately, depending on the size of the water supply scheme, the ULBs cluster could be broken up into smaller virtual entities and then the smaller aggregates could be analysed on similar parameters. As has been discussed in the earlier chapter, a financially viable virtual entity would require stronger ULBs to balance the weaker ULBs to derive higher benefits through risk mitigation strategies.

It also means that in such cases where despite aggregation, the entity is not amenable to capital market funding, then calls for direct intervention and financing by government. Alternately the government can withdraw from those entities which are viable through aggregation.

1.12.5 Approaches

This illustration provides insights into the possible approaches that can be adopted by the state government. In case of the 9 ULBs in our analysis, grouping all of them together did not qualify for market access either singly or even collectively. In such a case we would like to strongly advocate the development arguement and prudent use of scarce resources. This was clearly a case of direct intervention by the state government since 'water' forms part of core services and it is due to the citizens. At the same time even on an aggregation basis the ULBs have not qualified by any of the benchmarks. Grouping of ULBs for water projects is a prerequisite for scale benefits. The state government could adopt any of the 3 processes of aggregation listed earlier. To recap, it could be Voluntary, which means that local governments took the initiative to aggregate their water and sanitation services based on an analysis of the advantages and disadvantages of aggregation at their level, as in France and the Philippines. It could be voluntary but with incentives, carried out at the local level the incentives provided by a higher level of government, as in Hungary and, to a lesser extent, in Brazil. Finally the state government could Mandate a grouping in spite of local resistance, as in Italy, the Netherlands (although implementation was left to the regions and was relatively slow), and England and Wales, which had the strongest mandated aggregation.

There could be different forms of state intervention with of course the ultimate aim being to scale up the capacity of the weaker ULBs in ways that they are able to work on a stand alone basis in the future.

1.12.6 Economic Viability

Economic development today cannot rest only on developmental objectives. It has to be in an environment of economic viability. To understand this application, the illustration was further extended to understand the financial burden of bringing each of the ULBs in the group within the acceptable qualifying norms of a 'Salvageable' which could eventually morphe into a 'Cherry'. For each ULB in the sample, calculations were made to estimate the financial resources that would be required on an incremental basis and per capita basis to raise the status of the ULB from a 'Dud' to a 'Salvageable. Also,

some degree of support could also help upgrade the salvageable to the benchmark ratios derived from a sample of 90 cherries .

The support can be through dedicated funds from the centre or state government with the objective of providing that minimum support which can enable a ULB to meet at least one of the qualifying conditions of market access, namely, a Dependency ratio (DR) < 55, Administrative Expenses ratio (ADMIN) < 33 and Public goods expenditure (PUG)>28.

Such a sensitivity analysis has been presented in (Table:5). Certain assumptions have been made in the analysis to estimate the least support required to the ULB. For sake of calculation the upper limits of each of the ratios have been applied, although there can be variations even within the limits. In case of DR the analysis attempts to calculate the increase in own income required such that the current expenditures are not curtailed. Alternately one could argue for reduction in expenditures. In case of ADMIN, the negative numbers denote the extent of reduction in Administrative expenditure that is required. In case of PUG, the assumption is again the increase in resources required to enable the ULB to increase spending on public goods. It may be noted that the nine ULBs analysed also include 2 cherries and 3 salvageable which would in a sense provide a 'negative grant' to the 'duds' when the ULBs form a pool. The total revenue support is net of the surplus from the ULBs meeting the criteria.

As can be seen from the table the per capita additions to income or reductions in expenditures are small. Ideally, the ULBs could be incentivised and nudged to achieve these levels themselves. Alternately the state could intervene through a transfer mechanism of resources which could be linked to the project. The solution here cannot be generic. Every local area has its unique strong and weak points as well as aspirations. The model adopted would need to keep these factors in mind.

Table: 5 - Adjustments to make ULBs Salvageable through Least Support Method
Revenue Support (Rs. Lacs)

	Original DR	Adjusted DR	Revenue Support	Original ADMIN	Adjusted ADMIN	Revenue Support	Original PUG	Adjusted PUG	Revenue Support
Ahmadnagar	55.0	55.0	214.8	33.0	33.0	-526.7	28.0	28	70.2
Deolali Pravara	54.2	55.0	-1.5	28.2	33.0	9.2	28.0	28	35.6
Kopargaon	54.0	55.0	-2.9	33.0	33.0	-81.2	35.7	28	-22.8
Pathardi	55.0	55.0	19.0	33.0	33.0	-19.0	28.0	28	5.2
Rahata Pimpalas	55.0	55.0	18.8	33.0	33.0	-3.3	28.0	28	10.7
Rahuri	55.0	55.0	25.1	33.0	33.0	-59.0	28.0	28	35.3
Sangamner	55.2	55.0	1.0	33.0	33.0	-60.8	28.0	28	20.2
Shrigonda	51.8	55.0	-2.9	33.0	33.0	-0.9	38.1	28	-8.9
Shrirampur	50.8	55.0	-33.3	33.0	33.0	-33.3	28.0	28	84.0
			238.0			**-775.1**			**229.5**
Per Capita			Rs.36.97			Rs. -120			35.7

Note:

1. Figures in 'red' denote those meeting the benchmarks.

2. Negative sign in case of DR refers to the excess that the benchmark ULBs can bring to the pool. The positive numbers denote the addition to own income.

3. The negative in case of ADMIN refers to the reduction in ADMIN expense required. The positive number shows the addition to the pool.

4. In case of PUG the positive numbers refer to the addition in income required to increase expenditure on public goods. The negative numbers show the addition to the pool.

While we attempt to correct any of the 3 qualifying indicators to improve the ULB to the salvageable level there are certain limitations that need to be explained. Each of the indicators considered, whether DR, or ADMIN or PUG are not mutually exclusive. Hence correction of any would bring about changes in the others. This could be estimated through a further sensitivity analysis. Nevertheless, the argument being made here is also in the background of the resource limitations of the government requiring least financial effort. The table has estimated the minimum support required from the higher levels of government to enable the ULBs to make the grade for a salvageable. In our example the per capita revenue support to bring all the ULBs in the pool to achieve the PUG ratio of 28 is the minimum at Rs. 35.7 per capita. If such an amount is made available to the pool

of ULBs, they would as a 'pooled entity' meet the criteria of a salvageable entity. Once this status is achieved, the ULBs can access capital market funds on a pooled basis. If projects can be implemented with this kind of hand holding, it can provide a solution to creating development projects even in the ULBs which cannot qualify on their own.

1.12.7 Scope for Further Analysis

This analysis could also be attempted to a virtual group of contiguous ULBs around a strong cherry. Such a group may perhaps qualify on at least one benchmark, thus creating the minimum base for market support. Alternately, this analysis could be extended to provide a threshold for funds support from the higher levels of government and can provide a scientific basis for devolution of funds. The threshold criteria could be the minimum support required for a group of ULBs to make a transition to a salvageable pooled entity. It could also be extended to estimate the total per capita support required by all ULBs in a district to attain the cherry status. This could then be project linked to ensure the improvement of services at the ULB level. In a scenario of resource crunch, such a basis for fund devolution would be more beneficial than a standard uniform devolution. At the same time such an approach does not depend on guarantees or full fund support from the state government.

1.13 The Way Forward

The paper has focused on the merits of aggregation of ULBs particularly with a view to improving public services. The benefits and experiences of aggregation of local bodies for water supply have been explained, amply supported by literature from the World Bank. However, aggregation can fail if benefits are not clearly understood and there is no adequate process in place to implement it. Due process and political will are key to the success of the aggregation initiative.

Combining these learnings' with the modified pool mechanism proposed by Pethe et al. can provide a mechanism for the large number of smaller ULBs in the country, to access capital market funds and improve urban services. At the same time, such aggregations can provide a mechanism for more targeted devolution of funds.

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