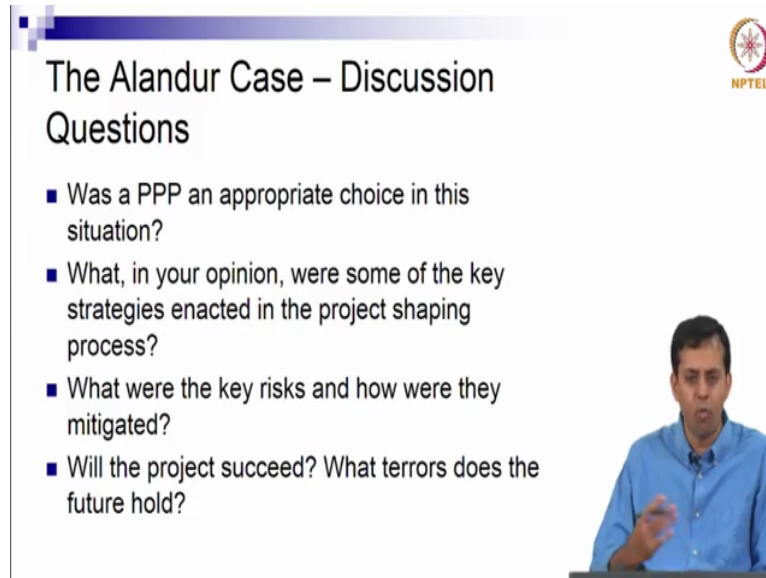


Infrastructure Planning and Management Public-Private Partnership for Infrastructure Case Studies Part 2

So I am going to pick two case studies one of them is an Indian case and the second one is an international case, ok. Let us first look at the Indian case study oops sorry.

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The slide features a blue header bar with a white square icon on the left. The title 'The Alandur Case – Discussion Questions' is in a large, bold, black font. Below the title is a bulleted list of four questions. In the top right corner, there is a circular logo with a red and white design and the text 'NPTEL' below it. In the bottom right corner, there is a small video inset showing a man in a blue shirt speaking.

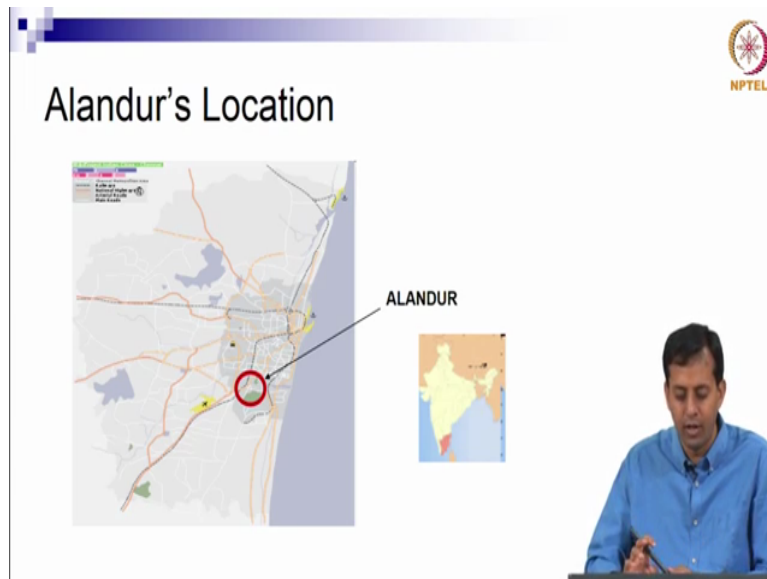
The Alandur Case – Discussion Questions

- Was a PPP an appropriate choice in this situation?
- What, in your opinion, were some of the key strategies enacted in the project shaping process?
- What were the key risks and how were they mitigated?
- Will the project succeed? What terrors does the future hold?

The Indian case study right is a case study on the Alandur sewerage project right, this is been provided to you access to this case has been provided to you so you can certainly read this case if you have not done so already right and what we are going to do I am going to explain the case a little bit right we will talk through the story of that case but we want to talk about you know PPP was attempted but was that the right thing to do, right and what was some of the key strategic actions that were undertaken? What were some of the key risks in this project?

So let us take this PPP and just look underneath the hood to see what were the risks in this project? What happened was PPP in the right option or not? Ok, all right.

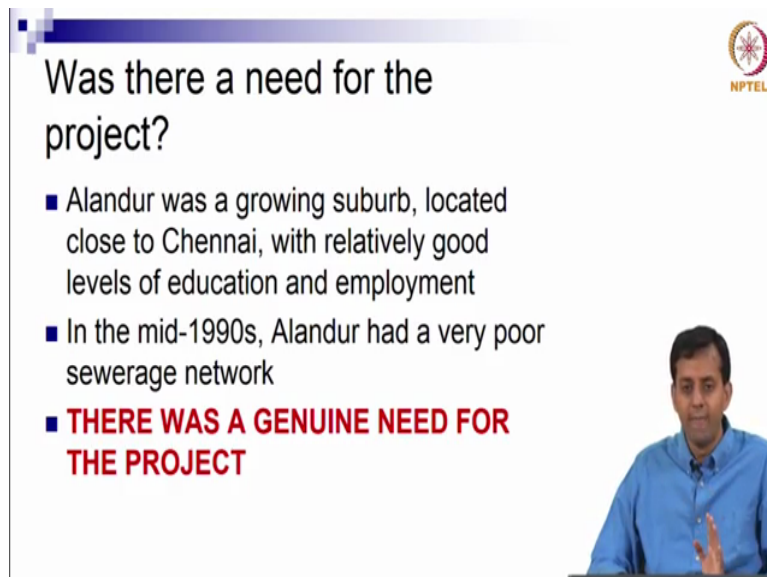
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The slide is titled "Alandur's Location" and features a map of Chennai, India. A red circle on the map highlights the Alandur area, with an arrow pointing to it from the word "ALANDUR". An inset map of India shows the location of Chennai on the east coast. The NPTEL logo is in the top right corner. A man in a blue shirt is visible in the bottom right corner of the slide frame.

So first of all quick geographical lesson well is where is Alandur, Alandur was actually a suburb of Chennai right, so for those of you are in Chennai or those of you have visited Chennai if you come all the way from the airport into the city right you will essentially pass through this area called Alandur right, so it was it is own it had it is own municipality had a municipal commissioner etcetera I think now of course it is been integrated into the greater Chennai area but essentially I Alandur is very close to Chennai in fact very close to IIT Madras by the way just behind us, right.

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The slide is titled "Was there a need for the project?" and contains three bullet points. The third bullet point is highlighted in red. The NPTEL logo is in the top right corner. A man in a blue shirt is visible in the bottom right corner of the slide frame.

- Alandur was a growing suburb, located close to Chennai, with relatively good levels of education and employment
- In the mid-1990s, Alandur had a very poor sewerage network
- **THERE WAS A GENUINE NEED FOR THE PROJECT**

Now Alandur required with was thinking of a sewerage project, right essentially a wastewater project ok and they were thinking of two parts one is so most people in Alandur when you

know they were most of their waste were being managed by using these technologies like septic tanks and in those kinds of things we had a bunch of individual houses the house would have a septic tank or a soak pit or something like that and the wastewater would essentially be treated through those in some cases they would probably be just letting the wastewater out of the compound, right.

So Alandur wanted to develop a sewerage treatment solution, they wanted to do two things they wanted to develop a piping system right where they would take all the wastewater from the various houses, establishment schools, offices whatever right, to a centralized treatment facility and they wanted to build a sewerage treatment plant to process the wastewater that was being generated by the citizens and residents and businesses of that municipality, ok.

So the first question to ask is look was there really a need for this project, were there you know a handful of houses that were generating so which or was this actually a widespread need was this a large enough problem and I feel that for any project this is a question that you have to ask this has nothing to do with PPP is just a simple question on is there a need for this project? Ok.

So when you look at Alandur and this was about we are talking about in almost 15, 20 years ago now, Alandur is a growing suburb right at that point it was really a suburb of Chennai right no longer but at that point it was a suburb of Chennai but it was growing very fast, right it had relatively good levels of education and good employment what that meant was there were a lot of people that were moving to Alandur were trying to build residences in Alandur, land prices were low, schools were good, a lot of these people were employed in the IT corridor and therefore you know they were becoming prosperous families were growing.

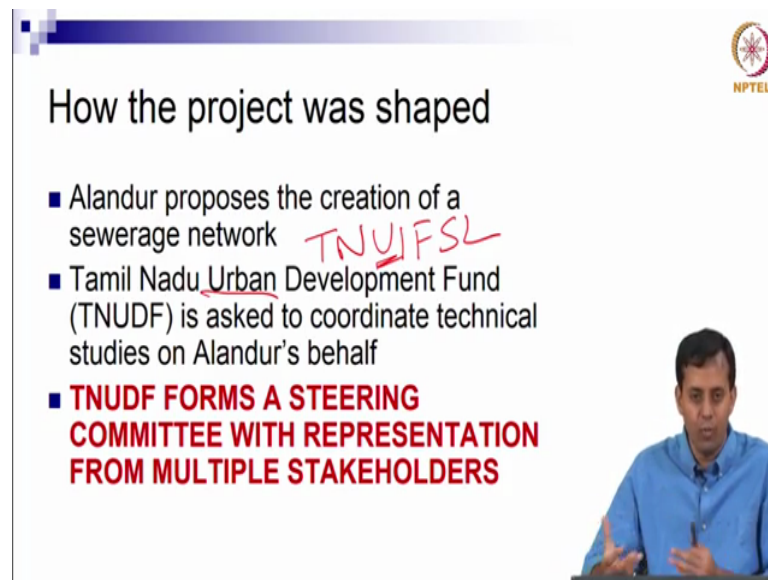
So the amount of wastewater that was being you know created there or generated there was very high right and there was clearly a need for some solution some project that you really needed to manage the wastewater, so there was no doubt to me that there was a need for this project right and on top of it Alandur had a very poor sewerage Network, right so there was really nothing that was really you know containing the wastewater that was being generated, right.

So all of this put together this was not just some fanciful you know politicians imagination right, Alandur as a community had a very poor sewerage network they had a lot of people who were moving into that community, were working in that community a lot of sewerage

was being generated and therefore it was important that they come up with a project to collect that sewerage and treat it in a treatment plan, right so need for a project.

Now the question is should we do this project through PPP, should we do it just have the government do it through tax payer collections? Ok.

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The slide is titled "How the project was shaped" and features the NPTEL logo in the top right corner. It contains a list of three bullet points. The first bullet point is "Alandur proposes the creation of a sewerage network" with "TNUIFSL" written in red above it. The second bullet point is "Tamil Nadu Urban Development Fund (TNUDF) is asked to coordinate technical studies on Alandur's behalf". The third bullet point is "TNUDF FORMS A STEERING COMMITTEE WITH REPRESENTATION FROM MULTIPLE STAKEHOLDERS" in red text. In the bottom right corner of the slide, there is a video inset showing a man in a blue shirt speaking.

- Alandur proposes the creation of a sewerage network **TNUIFSL**
- Tamil Nadu Urban Development Fund (TNUDF) is asked to coordinate technical studies on Alandur's behalf
- **TNUDF FORMS A STEERING COMMITTEE WITH REPRESENTATION FROM MULTIPLE STAKEHOLDERS**

So let us start addressing that question, ok. Alandur first proposed the creation of a sewerage Network ok, logical thing to do given what we saw in the previous slide right, this is an organization and Tamil Nadu and many other states have this it is actually well the precise name is the Tamil Nadu Urban Infrastructure Financial Services Limited it is called TNUIFSL is what we often call it, within that there is a fund called the Tamil Nadu Urban Development Fund right, this is a part of money which is essentially to be spent on infrastructure development projects but this is not a grant right, this is not free money essentially municipalities are expected to borrow from this fund.

So you know a lot of investors put money into that fund municipalities borrow from this fund and then they repay that money at some sort of interest rate but this is essentially intended to help develop infrastructure projects right. so Alandur said look TNUIFSL you know you guys are set up to help develop infrastructure urban infrastructure that is where the U stands for in both TNUDF and TNUIFSL can you help us? Right because we have an urban infrastructure problem, right.

So TNUIFSL was only too happy to do it and they said ok let us form a steering committee, let us help you figure out how to do it and when it comes time for you to raise some funding


for this then I will be able to put in some money right, so TNUIFSL became Alandurs you know project shaping consultants of human right formed a committee etcetera, ok.

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Financing the Project

- In 1998, a consultant prepared a design of the system
- Project cost was around USD 10 Million
- Alandur's municipal revenues were insufficient to cover the costs of the project
- **TNUDF decided to structure the project based on a combination of 'soft' loans, grants and user deposits and fees**



So it was very clear you know you can do a little bit of engineering analysis and you can figure out you know how many kilometres of pipe need to be laid and given that you know the population of Alandur you know what the capacity of the sewerage treatment plant should be should is it 30 MLD, 40 MLD, so that was easy once you figure out what the project requirements are you also then have to figure out how to finance the project, ok.

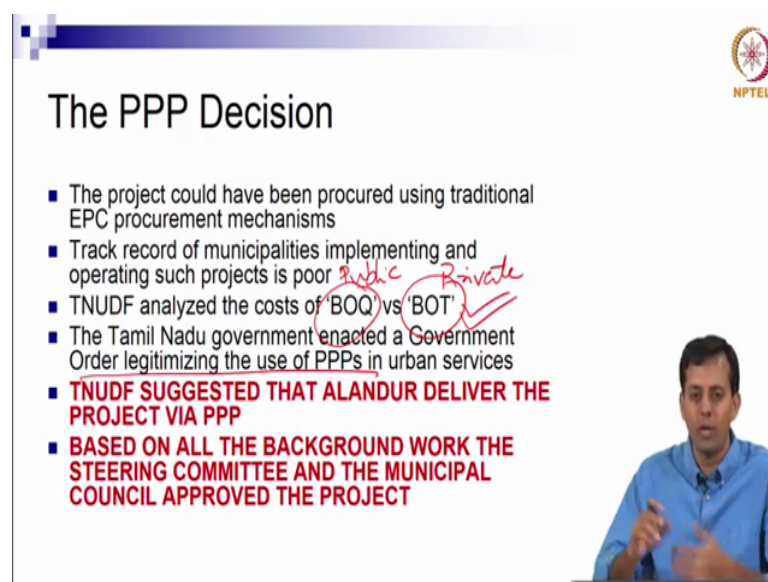
So in 1998 a consultant prepared a design this is the engineering design, so that helps you understand what is the scope of the system? What is the cost? So many kilometres of piping cost so much, a treatment plant of so many MLD cost so much etcetera, right and the project cost came around you know 10 million USD US dollars equivalent at the time, the reason people were representing this in terms of USD this if you get then funding from the Asian Development Bank or the World Bank or whatever they can probably react better to a figure like this, ok.

So I need USD 10 million from somewhere right to do this project otherwise I am not going to be able to do this project ok, but if you look at Alandur municipality right so normally municipalities collect revenue from a bit of property tax and a little bit of other taxes here and there, their revenues were very tiny right and remember the municipality needs to pay it is staff, they need to take care of solid waste, they need to take care of streetlights, foot paths I mean this is not the only expense for the municipality and it turned out that given the

revenues that they were making and given the exist expenses they already had they did not have ten million to spare to develop this project right which means they had to go and get the ten million from somewhere, ok.

So TNUDF said ok let us structure this project right, as a combination of some loans that you will get from people, some grants that you will not have to the repay and also help the users ok who are the members of that community, let us also see if we can get some money from them as a user charge right user deposit or user fees that will help you know fund the project right, so they said look you cannot no one is going to give you a 10 million right you do not have the 10 million, so rather than going and borrowing all ten million and then being stuck with debt repayment can we borrow a little bit can we get some grants and can we also get members of that community to pay for that project, right.

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The slide is titled "The PPP Decision" and features the NPTEL logo in the top right corner. The main content is a list of bullet points. The first three points are in black text, while the last two are in red text. There are handwritten annotations in red ink: "Public" and "Private" are written above the words "BOQ" and "BOT" respectively in the third bullet point. The fourth bullet point has "enacted" underlined. The video inset shows a man in a blue shirt speaking.

- The project could have been procured using traditional EPC procurement mechanisms
- Track record of municipalities implementing and operating such projects is poor
- TNUDF analyzed the costs of 'BOQ' vs 'BOT'
- The Tamil Nadu government enacted a Government Order legitimizing the use of PPPs in urban services
- **TNUDF SUGGESTED THAT ALANDUR DELIVER THE PROJECT VIA PPP**
- **BASED ON ALL THE BACKGROUND WORK THE STEERING COMMITTEE AND THE MUNICIPAL COUNCIL APPROVED THE PROJECT**

So relatively you may have good sound idea as far as I can tell ok and then they went one step further and said look we could just have Alandur municipality get all of this money right and then build it using so all of the money comes to Alandur municipality and we will build it using our own funds right, so it can be done through the public procurement mechanism but there is one issue, the issue is that you know we do not know how good the quality of the construction will be and very often.

You know municipalities at that time we are very good at building but not necessarily very good at operating right and the theory behind PPP is as we have talked about earlier is that a private sector player often comes in with the capacity to build and the capacity to operate and

because they are being paid based on how well they operate the facility they are probably going to be more motivated to you know do a good job of operating and maintaining the sewerage treatment plant right because that is what is important you build a sewerage treatment plant, so that wastewater generated in the community goes somewhere and gets processed right ,so you do not build it for the sake of building it you build it so that it is operation ok.

So the track record of municipality is implementing this project such projects was poor at that time and municipalities as the same municipality such as Alandur small municipalities etcetera right. So TNUDF said ok let us perhaps look at what would happen if we did this BOT which is called the private sector or BOQ which means bill of quantities right which is just another way of saying that the public sector would procure because the public sector would then have created a bill of quantities, raised some funding use some funding to you know buy and implement those quantities and run the project, so this is public and this is private, ok.

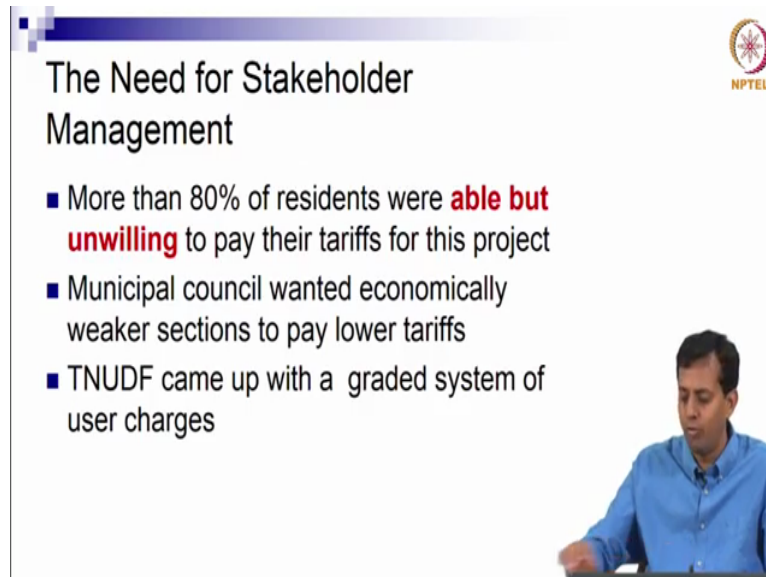
So they analyse the cost of BOQ versus BOT and said if there is BOQ then perhaps your operations will not be as efficient and therefore the cost of operations will be much higher maybe your construction is much slower whereas with the BOT the construction could be much faster which means you might actually start making revenues much earlier so they did a bit of a comparison to figure out which one might be better simultaneously right.

We talked about legitimacy the Tamil Nadu government they we did not have any laws or acts or policies at that time we enacted a government order, legitimizing the use of PPP in urban services in other words the government said yes it is possible for any department municipality or whatever within Tamil Nadu to deliver these projects through private involvement and transferring risk to the private sector right because constitutionally it is possible to say that no this is all the government is responsibility right how can you allow a private sector to build some what is essentially supposed to be a facility to be provided by government.

So a law was enacted saying no that is absolutely fine right the PPP is but legitimized right and so after doing this analysis TNUDF said that you know the BOT right seems better than the BOQ right, let us give it to a private sector they are likely to be much more efficient we also have now legislation that says private sector participation is possible right, so why do not we deliver this project via are a PPP ok was the suggestion that was being made.

So said it was made and will investigate whether this was the right suggestion or not right and so based on all the background work the council approved it and said ok this is fine, this is logical we need 10 million we will raise it through these mechanisms but we will not do it we will give it to a private operator because they will be more efficient, ok all right.

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The Need for Stakeholder Management


- More than 80% of residents were **able but unwilling** to pay their tariffs for this project
- Municipal council wanted economically weaker sections to pay lower tariffs
- TNUDF came up with a graded system of user charges

Now remember there were you know there was a loan part, there was a grant part and then there was this part about going to residents and asking them if they would actually fund part of the cost of the project and you know pay some kind of a tax or whatever to keep the project running right but about 80 percent of residents in Alandur were unwilling to pay tariffs for this project right.

So it is went and asked them will you pay an extra tariff for this most people said no I am not interested, right why should I pay? ok first of all I am paying taxes, second of all the government is not really doing very much so if I pay money what is the guarantee that you will do something with it right, so the big lack of trust with regards to Alandur, right. So the municipal council wanted economically weaker sections to pay lower tariffs etcetera which is also fair right not everyone rich people and poor people cannot necessarily pay the same tariffs.


So TNUDF came up with a graded system of user charges based on the plinth area of your facility, right.

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User Charges


S No.	Domestic Connections		Commercial & Industrial Connections	
	Plinth Area (Sq. ft)	Monthly Tariff (INR.)	Plinth Area (Sq. ft)	Monthly Tariff (INR)
1	Less than 500	60	Less than 500	200
2	500 – 1500	80	500 – 1500	400
3	1500 – 3000	100	1500 – 3000	600
4	More than 3000	120	More than 5000	1000



So depending if you had if you essentially the idea is that if you are a rich person you would live in a larger apartment and therefore your monthly tariff would be higher right whereas if you are not so rich person then you would live in a small apartment and therefore your monthly tariffs would be low right, so that was essentially so if you lived in a it is I mean the point is you would still if it is a family of 4 whether you live in a large apartment or a small apartment you are probably generating the same amount of wastewater right but clearly you are paying capacity is different.


So there was this sort of graded as you can see on this slide depending on the plinth area tariff was said the smaller the plinth area the lower the tariff similarly it was not just for domestic connections for commercial industrial connections, smaller offices paid less, larger offices paid more offices in general paid more because they are commercial entities than residences right, so they sort of said ok will this help? Ok.

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The Stakeholder Consultation Process

- A team was formed consisting of the Mayor, municipal officials and TNUDF representatives
- The Mayor had been in office for 16 straight years!
- The team crafted a message based on data, to convince the residents to pay
- The team, led by the Mayor campaigned from dawn to dusk
 - Conducted door to door visits
 - Held meetings at street corners
 - Met with Residents Welfare Associations
 - Kept project documents open to scrutiny
 - Crafted newsletters and press releases on the project



Will you be willing to pay now ok but they did not stop at that right they did not stop at that because they felt that the answer would probably be the same people might say yeah okay this is a good concession but at the end of the day you know I do not want to pay because I think government should be doing this and secondly there is no guarantee that if I pay right that anything pertaining over there anything will happen you know you might just take all my money and do something else with it or it might just go into the pockets of people and all those kinds of things, right.

So a lot of distrust, so the municipality and TNUDF realized that you have to build trust somehow right and so they engaged on in my view a very unique stakeholder consultation process right, so they first formed a team which had what we call the municipal chairman or in other parts of the world it is called the mayor right other Municipal officials right so essentially people from that municipality and representatives from TNUDF right a team was formed.

Now these people right and particularly the mayor I think if we need to talk about this mayor for a second you know I will not name him but he had actually been elected or he had been mayor or municipal chairman for 16 straight years right and these are four year terms so he had been elected for four straight terms, now this is remarkable because in most places in India right you will find that the party that wins an election almost always loses it the next the next period right and particularly in Tamil Nadu we have two strong political parties and during this time literally every election cycle you would see a flip flop one election cycle the first party would win second election cycle the next party would win and these would often

be landslide wins right it would not be sort of you know 45 percent, 55 percent vote share or seat share it would actually be 80 20, 20 80 and so on.

In this political context to have been elected for 16 straight years have been elected for four straight terms it is remarkable right it sort of indicates that this person has you know he is the trust of the community because irrespective of whoever is winning or losing elections at the state level or at the national level this municipal chairman is being elected year after year right, so clearly the municipal chairman has you know there is something about him right he the community trusts him, so this person realized that right and decided to play a very important role in the stakeholder consultation process, right.

So essentially the team crafted a message based on data to convince residents I will talk about that in a second but essentially this mayor this municipal chairman in the morning gets into his car his ambassador or whatever vehicle has been given and drives around the municipality right literally goes door to door visiting people you know holds meeting at street corners meets people from the resident welfare associations and essentially tells them you know as loud speaker when he talks about the project literally touches almost everybody in that community right and personally says look we want to do this project and we want to do it through a PPP, right.


So first of all if you are a resident in that community and you have a chance to speak to the municipal chairman then you probably feel good about it and you probably feel that this is a humble person who is actually going to do a good job right, so it creates that image but you will still ask the question why is it costing so much money right is not there a better way to do this why do I need to pay these user charges, ok.

So this is where the municipal office the people who came with them took the help of the TNUDF people and said ok look here is the spread sheet, here is the excel on which the calculation is being done ok, now you look at it and let me know I mean if you have a way in which you can modify this spread sheet and come up with a better solution we will go with it but here is what it is here is why we think right it is going to take 10 million ok, this then helps people convince themselves that hey I mean these people are not trying to cheat us, the actual cost is actually 10 million.

So they kept project documents open to security to scrutiny crafted newsletters, press releases so people said ok I mean these people are serious they are coming literally door to door and


meeting with me and they are explaining the project and if I have any question on the financials there is actually data to support why you are charging me so much? why it cost 10 million etcetera? Right so that was one level of trust that was being built, ok so they helped.

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Building Stakeholder Confidence

- TNUDF helped clarify technical and financial issues
- A separate bank account under the name 'Alandur Municipality Underground Sewerage System' was created
- A monitoring committee was created to monitor the account, which included Resident Welfare Association leaders
- Residents paid deposits along with their taxes
- **TWICE AS MUCH MONEY WAS RAISED THAN EXPECTED!!!**



So TNUDF I mean the municipality may not have known the ins and outs of the PPP calculations and the spread sheet and the financial model but TNUDF did, right so the fact that they were there helped clarify all of these issues ok, the second issue that came up is ok, all of this is fine but and I know that you need this project but how will you guarantee to me that this money will be spent wisely right because if I give it to the municipality it goes into the municipal account then I do not quite know whether my money is being spent for this or that because you are doing all kinds of expenditures in the name of the municipality right.

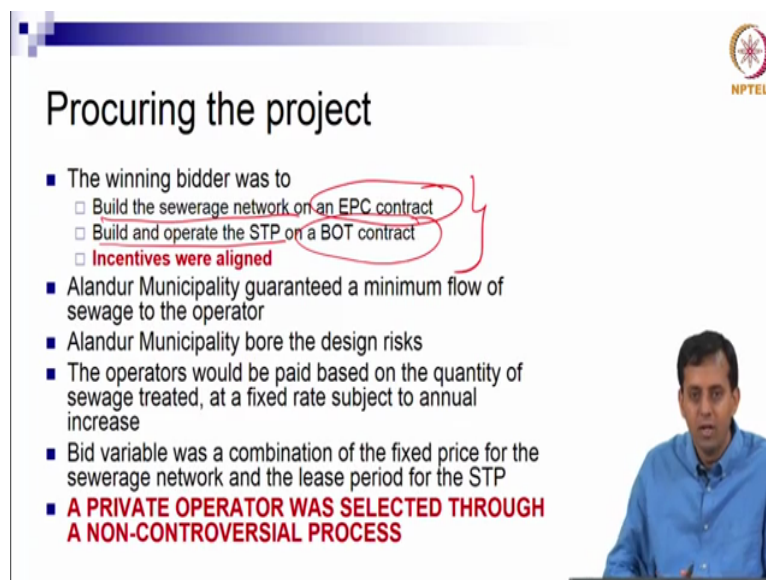
So Alandur said fine what we will do is we will create a separate account right we will create a separate bank account, so all of your money will go there so be very clear that all of this money is actually going to go to build a sewerage system ok, again the question comes in how do we know this money will be used wisely? Ok, good that you are creating a separate bank account but how do I know that you guys will use the funds in this account wisely right.

So the municipality said you know what we will create a monitoring committee and we will take some of your resident welfare association people write as signatories to this account right they will be part of the monitoring system right so it is not just us taking your money putting it into account and spending it the way we want people from within the community will actually help monitor right.

So a lot of effort was put in and this is not just going out and releasing a press release on this you know this is meeting people, understanding their concerns, working with them and coming up with a system where people first trust the mayor the municipal chairman in his office they understand the need for the projects and the need for the funds are being short and they are given confidence number three that they are actually going to that these funds will be used wisely, ok.

So and then they were told you know it is going to be easy when you pay your taxes just pay your rents, your deposits along with those taxes so I am not going to create double work for you ok and when this was done what was really surprised is when they started sort of you know collecting money people were so in tune with this project right and trusted the municipality so much that twice as much money came in from residents than was expected right because normally when you expect residents to pay a deposit or a tax or whatever right you always account for the fact that some people will not pay and TNUDF accounted for this in their financial model but it turned out that such a good effort was done in building trust called a confidence that twice as much money was raised than expected right, so a lot of money came in from the from the public ok, right.

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Procuring the project

- The winning bidder was to
 - Build the sewerage network on an EPC contract
 - Build and operate the STP on a BOT contract
 - **Incentives were aligned**
- Alandur Municipality guaranteed a minimum flow of sewage to the operator
- Alandur Municipality bore the design risks
- The operators would be paid based on the quantity of sewage treated, at a fixed rate subject to annual increase
- Bid variable was a combination of the fixed price for the sewerage network and the lease period for the STP
- **A PRIVATE OPERATOR WAS SELECTED THROUGH A NON-CONTROVERSIAL PROCESS**

So essentially the winning bidder was asked to so they were actually put out a bid to build a sewerage network right and build and operate the sewerage treatment plant they said the sewerage network you do not have to do it on PPP you build it and we will pay you for it ok so we will come up with a cost for that you will tender it out, you build it and then you pay for it but the sewerage treatment plant let us do that on a build operate transfer you build it

and then based on your performance you will be paid a certain you know amount of money through the money is that the residents are paying us to upkeep the project, right.

But the thing was the same person was supposed to do both right and the idea behind this is very often what happens is you people split these responsibilities they say you build the sewerage system, sewerage system you build the sewerage treatment plant then you have these issues of my sewerage treatment plant is built but my sewage system is not yet ready and therefore my plant cannot be operated or the other way around the sewerage system is ready wastewater can fluent but my plant cannot be built, right.

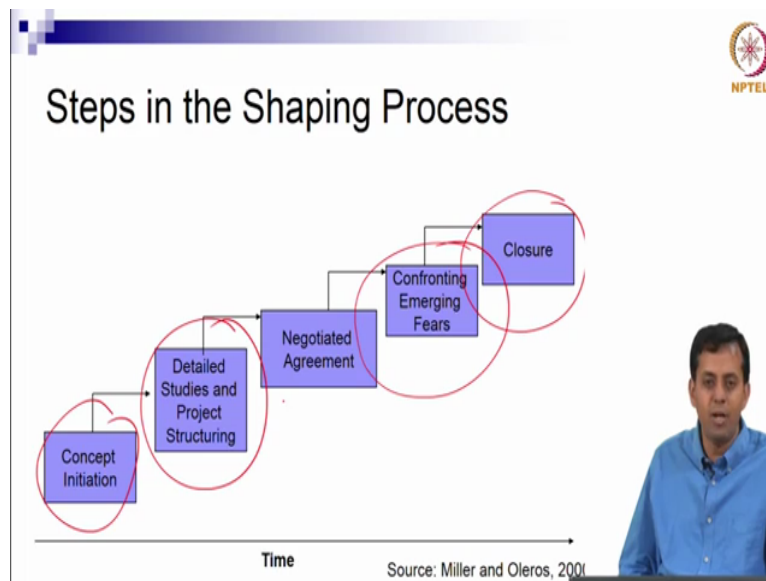
So essentially they said the same person must do both so that this interface is integrated ok, so incentives were aligned Alandur municipality also said in respective will guarantee a minimum flow of sewerage to you right Alandur municipality said look we will design it and give you the design so you do not have to worry about designing, design risk is on me and the operators would be paid based on the quantity of sewerage that was treated, so more sewerage that they treat more money that they make, so it is essentially a payment based on per kilo litre of sewerage treated with a certain fixed minimum amount given guaranteed by the municipality, ok.

So even if the entire community of Alandur went on a holiday there would be a certain minimum amount of sewerage that or sewerage treatment amount that would be paid to them but essentially beyond that minimum the more that the project operator treated the better their pipelines were the more sewage they were able to take through their pipelines and take to the sewage treatment plant and the more sewage that they were able to treat the more money that they would make, right.

So if their collection system was efficient their operation of the plant was efficient they would make a lot of money right, so this was to incentivize them to build a state of the art sewage treatment system ok and I am not going to talk about the bidding but there was a bid variable which was a combination of ok what is it going to cost you to build the sewerage network and how much money do you want for? How may how long do you want to operate the sewerage treatment plant?

So a number of people bid and there was some weight edge between these two criteria score was arrived at and somebody was selected who was could optimally build the sewerage network and operate the STP, ok.

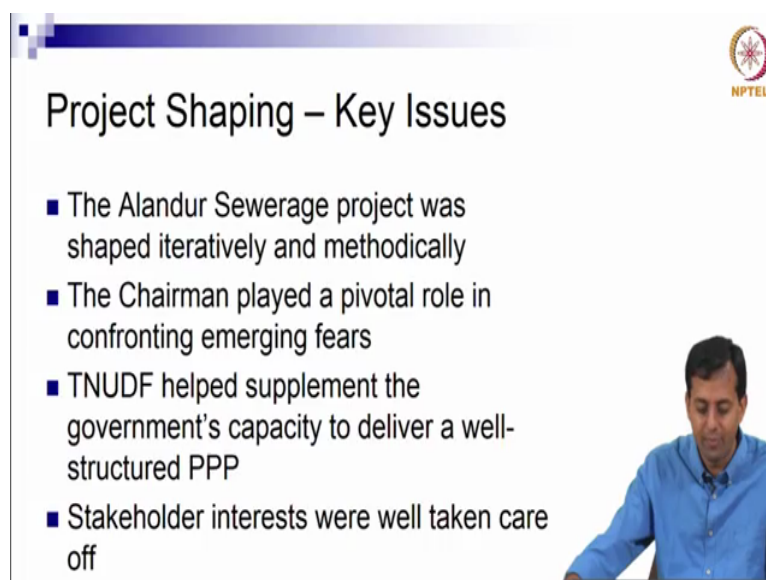
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So a private operator was selected through a very non-controversial process all this was fine right, so if you look at we talked about this earlier how do projects get initiated a concept was initiated detailed studies were done both financially and technically right to come to some kind of an agreement a lot of fears emerge from the community why do we need to pay and all of these were addressed before we got to project closure.


So it is a very long and detailed process they did not wake up one day and say we need a sewerage treatment plant ok here is a design let us get somebody to build it for us right long protracted process, ok.

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So key issues a project was shaped iteratively and methodically chairman paid a pivotal role we have seen this right and the TNUDF helps supplement the governments capacity interact were quite interestingly TNUDF was going to give a loan to the government to the municipality at about 16 percent or 14 percent or some interest rate but because they got so much money from the residence Alandur municipality went back to TNUDF and said I do not need that loan that you wanted to give or I do not need that much of a loan that you wanted to give me I need far less because I have already got money from the community right and as a result of it the interest that they had to pay was reduced quite a bit, ok.

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Key Risks

Risk	Risk Mitigation Measure
Political Risk/Citizen's Willingness to Pay Risk	Presence of a strong project champion in Mr. Subramaniam
Economic and Financing Risk	Minimum Guarantee agreement signed by Alandur municipality with respect to flow into the STP
Social Risk ✓	Intense stakeholder consultations with citizens and resident welfare groups
Technological Risk ✓	Selection of qualified private contractors who were provided with state of the art designs




Stakeholder interest were well taken care of right, so this is not the mayors real name but I just put that in to mask his confidentiality but if you look at in terms of risks political risk though the mayor was a strong champion of the project as we have seen, economic risk was there really a risk to the private operator what happens if no sewerage comes in you know like a road where no cars go there was a minimum that was guaranteed at and by the way you know there is a certain community of people everyone is generating sewerage right.

At any given point of time 5 percent of that community will be traveling but 95 percent of that community stay there they drink the same amount of water they bathe, they cook etcetera, the amount of sewerage that is going to be released into the sewerage drains is more or less fixed right, so these are not really big risks from a technological perspective the contractor was very well qualified and socially a lot of these consultations really helped win the confidence of stakeholders, so if you look at these key risks all of these risks seem to have been mitigated right.

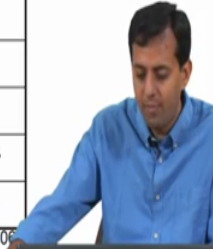
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Alandur



	Public	Mgmt Contract	BOT/BOO	Private
1. Existing Legal Framework	◆	◆	◆	◆
2. Political Willingness	◆	◆	◆	◆
3. Fiscal Space			◆	◆
4. Economic Stability	◆	◆	◆	◆
5. Institutional Capacity	◆	◆	◆	
6. Willingness to Pay	◆	◆	◆	
7. Ability to Pay	◆	◆	◆	◆
8. Project Size	◆	◆	◆	◆

Source: Wiles et al, 2006



So if you look at it in terms of the framework right, if you look at in terms of framework was there a legal framework remember the government did say right that they created legislation or they created a government order to allow for PPP is right, so all of these modes of procurement are possible PPP and non PPP was their political willingness? Absolutely right the mayor was a strong champion of the project right, so again nothing stopping them from doing it in the public domain but could do it in the private space also.

Fiscal space, that these guys have money? No they did right, so perhaps some kind of private involvement was required, economic stability? You know again at the time we were talking about India shining, India was growing a lot of these people who were part of that growth story a lot of the people living in Alandur well educated working in IT company is TCS enforces salaries arising, careers are growing so economically yes really good environment to implement a PPP still can do non-PPP but could also implement a PPP.

Did the government have the capacity to undertake the PPP did? Alandur municipality have the capacity not really not Alandur municipality by itself so just hold that thought for a second were people willing to pay? Not really at the beginning right remember people said they are not willing to pay but they were able to pay it is a pretty affluent municipality a lot of people well educated working in good jobs and the project was of a decent enough size that they were really good returns to be an active, ok.

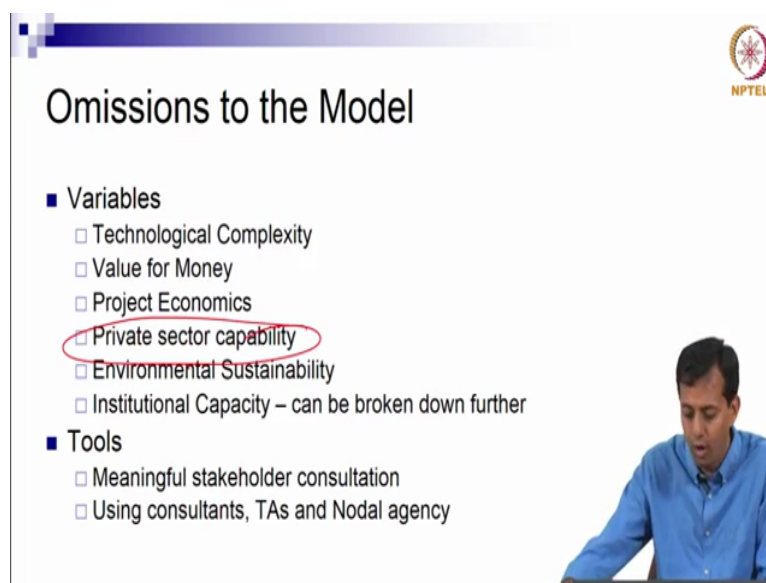
So the initial condition it looks like column 1 or column 2 have the most number of diamonds but when the Tamil Nadu Urban Development Fund came in right, the institutional capacity

was strength it right was certainly possible to do a BO T because TNUDF understood PPP is they were able to do the financial models and as a result of the stakeholder consultation there was certainly willingness to pay right and therefore a BOT or a BOO again was a possibility.

So again you see that this is the column with the maximum number of diamonds in fact all diamonds are there right they were initially a few diamonds that were not there and then a few risk mitigation measures were enacted to provide diamonds on those rows as well as a result of it is the BOT or the PPP model was probably the most appropriate model for this particular project which also explains why the project was reasonably successful, it was awarded somebody came in they built the project on time right so there were many successes with regards to how this project was undertaken.

So this is a PPP in India right which was enacted as a PPP for the right reasons right and therefore was somewhat successful, ok all right.

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Omissions to the Model

- Variables
 - Technological Complexity
 - Value for Money
 - Project Economics
 - Private sector capability
 - Environmental Sustainability
 - Institutional Capacity – can be broken down further
- Tools
 - Meaningful stakeholder consultation
 - Using consultants, TAs and Nodal agency


Now of course there are other variables they can also consider right, so you can look at you know it is environmental sustainability what about the private sectors capability? right you know we have talked about institutional care capacity among the public sector, do we have private sector operators who can both build and operate right so there are a few other omissions to this model and in fact there is some research that we did a write some time ago to say look can we put in more variables into these models.

So the so Antonio Vive is and his colleagues are eight parameters can we put in more and Antonio and his colleagues talk about you know risk mitigation tools can we start adding


some other risk mitigation tools and essentially say if you have a gap then can you use a tool to mitigate a gap right, so this is not necessarily the perfect framework to decide whether PPP should be done or not but it is a good framework and as you can see it is quite useful, it is a framework that you can use to look at a project and say ok should we do it through PPP or not, ok.

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A More Robust Framework




Resources	Political Factors	Impacts	Framework	User Factors	Commercial Factors	Miscellaneous
Financial Capacity of the ULB	Clear Govt. Commitment towards PPP	Social Pressures	Regulatory Framework	Ability to Pay	Investment Climate	Urgency of Completion
Managerial Capacity of the ULB	Presence of a Champion	Environmental pressures	Legal Framework	Willingness to pay	Commercial Viability	Competition
Technical Capacity of the ULB	Political Stability and risk	Social Benefits	Policy Framework	Community Involvement	Willingness to Charge	Presence of Auxiliary Infrastructure
Financial Capacity of the Private Sector	History and Economic Policy		Transparency	Project-People Interaction		Unique Features of the project
Managerial Capacity of the Private Sector			Accountability			




So this was a more robust framework that one of my graduate students came up with many more you know factors that we are put in.

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Scoring Alandur on this framework



Tool	UP	PUBLIC	PPP	Private	Weight
Capacity of the private sector	0.339	1.148	1.189		
Stability of the Govt. in the region	1.025	1.025	0.861		
Social Resources	0.815	0.758	0.41		
Environmental Resources	0.87	0.861	0.555		
Legal Framework	1.025	1.025	0.207		
Transparency	0.82	0.984	0.551		
Ability to Pay	0.82	0.984	0.551		
Completion	0.204	0.344	0.18		
Technical Capacity of the ULB	-0.216	0.594	0.351		
History and Economic Policy	0.6075	-0.405	-0.54		
Trust	-0.216	-0.189	-0.675		
Competition	0.54	-0.567	-0.594		
Auxiliary Infrastructure	0	-0.054	-0.405		
Score	13.8575	15.877	7.987		




We also said rather than just putting diamonds can we come up with weightages right can we get give each row a particular weight edge can we give a score and can we come up with a numerical index on how what is the quality of doing a public sector procurement? What is the quality of doing it on the BOT mode? Right. So we have done some research on this I am not going to bore you with it, I mean but there is more that can be done.

The point is that this is not necessarily the perfect framework I mean our research is not necessarily the perfect index either but these are good frameworks straight to decide whether or not such projects should be done on PPP is ok, right.

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What Happened Next

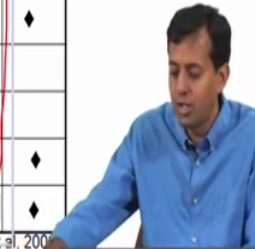
- TNUDF left after the project was awarded
- Alandur Municipality was unsure about how to monitor the contracts
- Several disputes arose between the municipality and the concessionaire
 - E.g: Who provides the last mile connections?
 - Disputes are in the process of being resolved



Alandur

	Public	Mgmt Contract	BOT/BOO	Private
1. Existing Legal Framework	◆	◆	◆	◆
2. Political Willingness	◆	◆	◆	◆
3. Fiscal Space			◆	◆
4. Economic Stability	◆	◆	◆	◆
5. Institutional Capacity	◆	◆	◆	◆
6. Willingness to Pay	◆	◆	◆	◆
7. Ability to Pay	◆	◆	◆	◆
8. Project Size	◆	◆	◆	◆

Source: Wiles et al, 200



Just quickly what happened next on this project, project went well the project is awarded successfully TNUDF left after the project was awarded right. Now here what happened was if

you go back to this chart here ok, if you go back to this chart remove this institutional capacity that we put in because TNUDF came in this went back out right, so the moment because TNUDF said look we are here to finance this project you are financed institute have selected somebody why do you need my help now, let us go away but TNUDF was playing an important role with regards to capacity right, they were helping, monitor the contract all of that right.

So Alandur was unsure about the contract right, because they had not got into the details of the financing the contracts etcetera and a few disputes started arising right, so this is again an example of a project where the decision to PPP I think to do a PPP was the right one right it was done because people like TNUDF supported the project, TNUIFSL supported the project, the project was awarded successfully could have been monitored successfully but because that capacity was taken out again the project ran into problems, right.

So the point is those diamonds that we saw they need to be there not just at a point in time but across the life cycle of the project for the project to be successful, right. So this is a project that was successfully awarded and then had some issues going forward and there were some disputes that were being resolved.