Urban Governance and Development Management (UGDM)
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Lecture - 34
Urban Land Management

Welcome to lecture 34. In this lecture, will discuss various aspects of urban land management. In last few lectures, we have been discussing about the built environment, built development of a city, housing and other aspects. Without a proper land management, it is not possible to shape a city, so will learn the land management in little more details.

Even though in some earlier lectures, we had a discussion on land as a basic resource where we found or we have discussed the various aspects, various characteristics of the land and any other matter.

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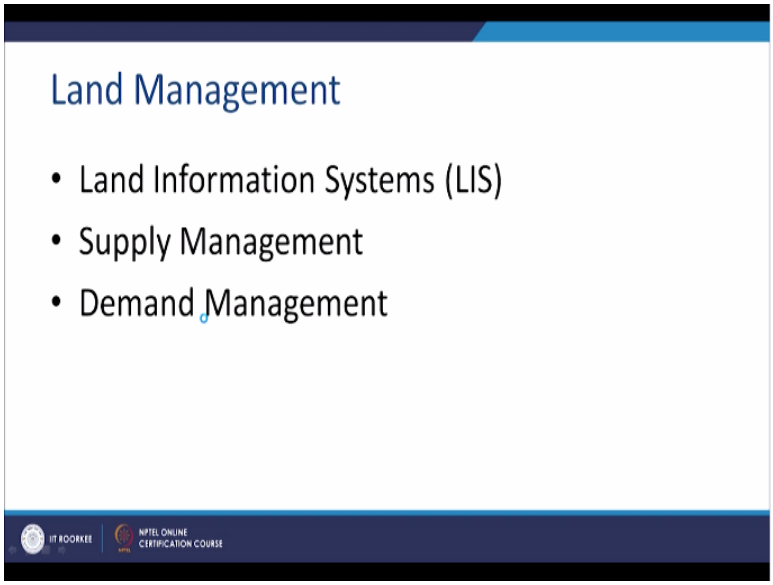

Today, will basically discuss that how land management is done, what are the stages of the land management and basically will learn the overview of land information system, land demand management and supply management. So let us start with the land information system. Before that I just start the discussion that why we need a land management?

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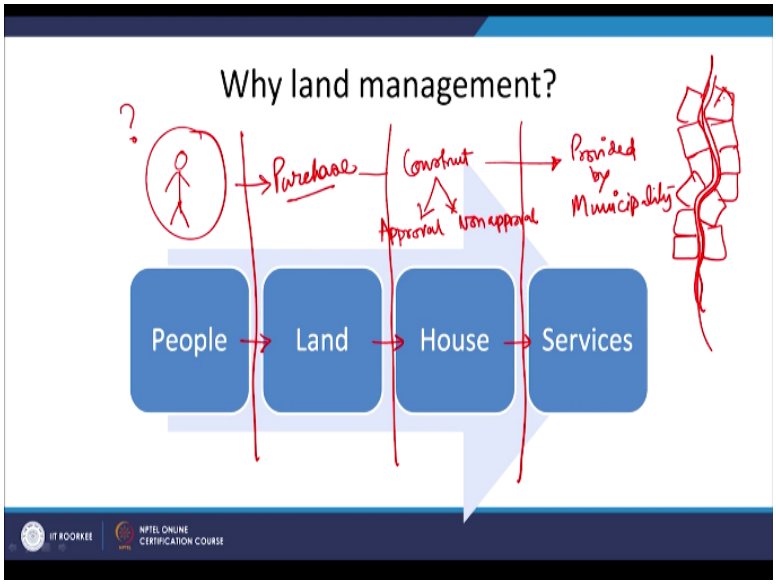

You have seen in your cities that most of the cities in India basically they are unorganized and when you see that cities are full of very low storage, congested areas having no accessibility or very little accessibility and practically making difficulty for the common people for making accessibility and navigability along the streets. So this does not mean that the city is a compact city or a high density city.

Basically, the city has grown organically as and when people came and they purchase the land, they constructed their house and later they found that the road and other basic infrastructure is not there. So if we could plan it, if we could prepare the land before people come before people purchase the land and provide the adequate infrastructure, then we can revert this process.

So let us see that what is the existing or the common practice that how land is converted from agricultural land or from other land to some habitation land let us see. So here in this diagram, you can see that in the first picture, a common citizen who comes and who needs a house who thinks about that how I can build a house. So he purchase a land from the market. Then, he constructs a house.

And after that now here either he can make through proper permission or approval or non-approval and after that the municipal authority they are asked to provide, provided by municipality. Now in this diagram, please follow that there is very less scope of providing services along with the land or before the construction and as a result many a times you have found that the urban roads are very narrow like this.

And it is surrounded by the plots or the building in such a way that you cannot make out or you cannot make a proper road network or you can provide any basic infrastructure. So this is simply because the people and land people comes first and they make the land and construct the house. Now instead of that we can revert the process let us see that how we can revert the process in a proper planned and managed land scenario.

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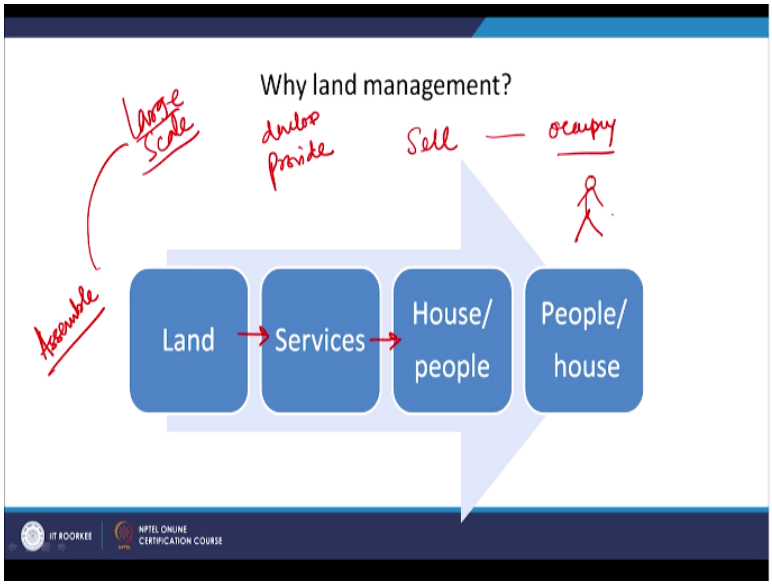

Now in this scenario, we assemble land. Basically, we assemble the land before considering the requirement or the demand of the people. So assembling land in a large scale, then we provide services and infrastructure. So provide or develop services and then we sell those plots or sell those houses to the people and then they occupy the house or the plot. Now in this scenario, you can see that land and services comes first and people come at the last.

So this is the ideal situation where a land has to be assembled, developed, infrastructure is provided and then given to people for their habitation so that they get all the adequate infrastructure and in this case the cost of the infrastructure is much lesser because the amount of acquisition, amount of the conflicts are very less in comparison to the earlier situation where we have to discuss with so many people.

And because everything is built up, you have to make a kind of a surgery in urban situation. So this is the two situations I am showing, so in short basic difference is like this.

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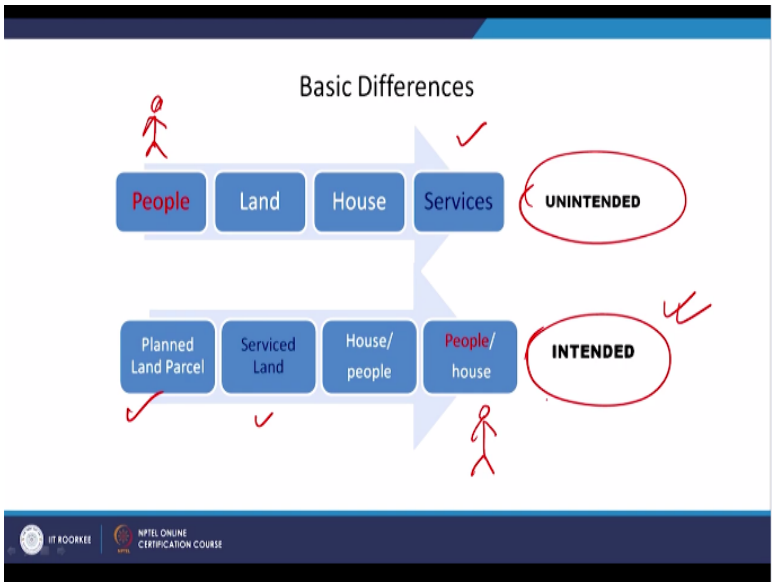

So in the scenario 1, the people comes first as I have told and services comes at the later and the second situation the planned land and services comes first and people come at the last. So this is unintended development, this is intended development which we try and because of this we can ensure the services and the basic infrastructure. Now let us see that so if this is the objective of the land management what are the salient features or elements of the land management?

So first component of a land management is the land information system, the way how we manage all kind of information of land in our department. So any land information system has 4 basic pillars.

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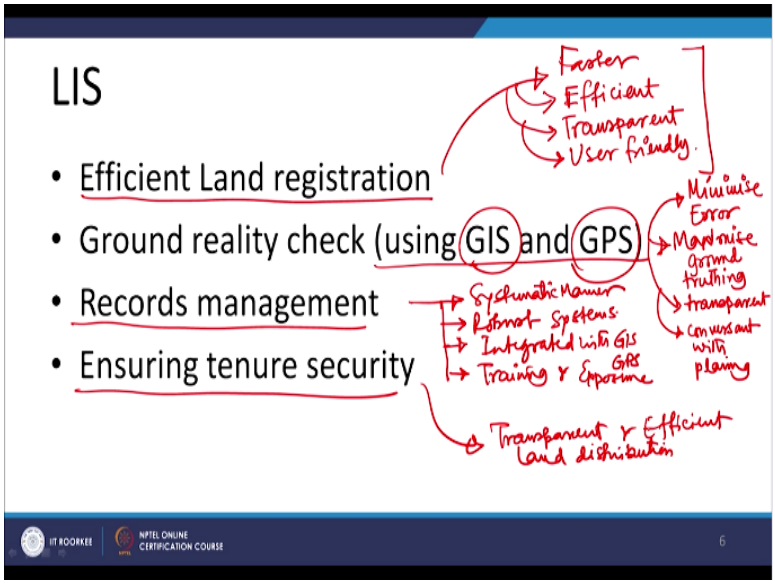

The first is the efficient land registration. Now you know that in your state or in your cities basically when you purchase a land or you convert the land use or land occupation, you register the land or the property under some land registration department. So this is essential under the law and land is a state subject because of that every state government has their state departments to do this job.

Now this land registration often takes lot of time like few months. Now can we make a system, make a mechanism so that the system of land registration becomes very fast like say within one week if the papers are ready. So question is land registration could be faster, efficient, transparent. You know that during the land registration there are cases of bribes and all those issues.

So transparency is another important mechanism and then user-friendly. So if we can maintain the faster method, efficient method, transparent method and user-friendly, the land registration could be very much easier. In some of the countries, in some of the cities, they have started land registration through one window system. That means you do not have to run through departments to departments, from one window one particular office you can manage the land registration process.

After that the next part is to keep the records in the government department properly so the record does not become wasted or spoiled. Now earlier classically the land records in the government departments are kept manually. What they do? They make the actual physical maps which are drawn in papers or paper like material and they keep in their archives. Now over the period of time this paper documents are definitely no longer working.

And this creates the loss of data or the distortion of the data and error in manual work or manual keeping of the paper works is also difficult. So can we keep the record after an error free ground checking of the land record? So next part of the land information system is the ground reality check using sophisticated technologies like geographic information system and global positioning system.

Now within this system our objective is to minimize error, maximize ground truthing that means the land data should be matching with the ground and it should be also transparent because you are using technology, people will accept that yes it is more dependable and also

it is conversant with planning method, so if you use GIS and GPS in land record management, this data directly can be used as a basic data or base map for the preparation of the future land use map or future plan, future master plan of the city.

So that is what is required. The second is the records management. This record management using the GIS and GPS should be done in a systematic manner robust systems, you can use IT based systems to keep the record in a centralized and decentralized method robust systems and it should be integrated with GIS and GPS and not only that for records management you need the sufficient training and exposure.

Because from manual to the different system to new system innovative systems you need to develop or you need to enhance the capability of your people. The next part is to ensure the tenure security using transparent and efficient land distribution. For example, if you want to purchase a land in your city and if you want to have an assessment of the land availability in the city, you would have to depend on the brokers or the middleman's.

There is no system except few better studies, better practices where you can get all the data in a centralized platform that what are the land available and whether those lands are verified or authenticated by the land departments or not. So since the land department has all the data's and the information, they can bring all the data in one platform and can share in a centralized platform.

So through this they can distribute the land to the people when it is required more democratically and more transparently. Another example could be that if you want to hire a rented house or if you want to purchase an apartment, now there are private websites or private property management websites where you will get some information.

But none of the informations are available on a geographical database where you can see the map of the city and you can click and you can understand the available property, available rented property, etc. So it is possible if all these informations are taken together are integrated in a common platform. That is that can be done if urban development department or the land department they take initiative.

And that is backed up with robust technology and robust back off of the better systems as we have discussed. So starting from the registration, land registration, ground truthing, record management and the land dissemination or land distribution. If we can integrate this process in a better manner in a systematic manner, this becomes a land information system better.

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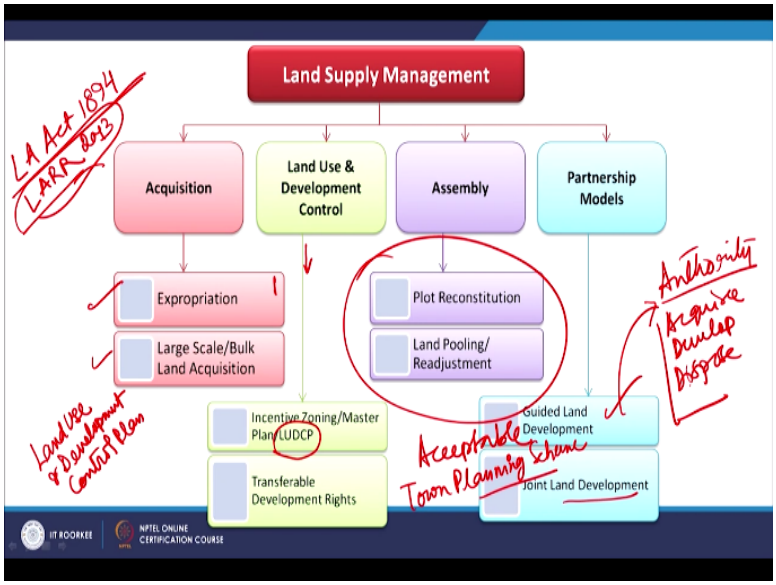

After that let us see that the next stage, so land information system basically enables you to keep and disseminate land. Now how we bring much amount or large amount of land under the public disposal so that for the large infrastructure this land can be utilized. So that is called land supply management. So we have basically 4 methods by which you can make the land supply in cities in our desired quantity.

First is the land acquisition, second is the land use and development control, third is the land assembly and fourth is the partnership models. Now let me explain one by one very briefly. Land acquisition, I discussed earlier that earlier we used to Land Acquisition Act 1894 and now we use Land Acquisition Rehabilitation and Resettlement Act 2013 and since this is a current act this act is used for all kind of land acquisition for all public purpose.

And this act also eliminated up to some extent the cases of the litigations, cases of the public unrest all this because it has the provision of the social impact assessment and taking consent of 70% to 80% landowners for taking all the land. So this Land Acquisition Act is there, will share the copy, you can study the act. So at present, I am not going into much details about the land acquisition.

Two, three things I would like to mention that land acquisition process is a time consuming process and unless it is a completely public purpose, you cannot go for land acquisition. So if you are sure that it is the public purpose and you are going for land acquisition and you have sufficient time to plan and to assemble the land then only you go for land acquisition, yes urban local bodies and development authorities they can acquire the land as per their requirement.

The second method by which we control land so that you can use some land that is land use and development control. So earlier we told that we can make so okay. So these are two methods under expropriation and large scale acquisition, both are basically compulsory acquisition using land and under the land use and development control we use one is LUDCP which we discussed earlier also, land use and development control plan.

Now in LUDCP or master plan, we can basically play with the land use density and the control to make a variable amount of land use or variable extent of the land use and its compactness and we can use the land value in a better way so that some land can be given much importance, can be available for the public purpose. So this LUDCP or any master plans these are done usually by the Town and Country Planning Department under Town and Country Planning Act.

So LUDCP ensures making a land use register for every city or every planning area and then make a future land use map. So future land use map or future land use control plan ensures that which are the land is dedicated for public purpose, which are the land which is dedicated for the public purpose.

But the disadvantage of the LUDCP is that there could be legitimate discussions or the discourses that why such and such land is given for public purpose, such and such land is shown as a private purpose. So LUDCP preparation or land use map preparation is always therefore a participatory method and to eliminate this kind of process or the conflicts of the unrest we always prefer land assembly is the innovative method like land readjustment, land plot reconstitution.

So let us see that what are those methods. Now in plot reconstitution, land pooling readjustment, what we do basically we do not acquire the land or we do not only make the

land use control like LUDCP. Here we take the land temporarily from the land owners, we develop the services and we upgrade its quality and then give back some amount of the land.

For example, if we pull 100 units of land from the land owners and which are raw land or agricultural land and we provide the basic services like road, water supply, sewage, drainage, etc electricity and we return back some amount of land, why some amount of land maybe 50% or 60% because other land is utilized for the infrastructure and some profit, some profit are commercially viable land user so that you can build your infrastructure.

Now since the cost of the land, the earlier land is much lesser and the cost of the price of the developed land is much higher that is why it is much more acceptable to the land owners and because of this method this is highly acceptable method and in India it is called town planning schemes. Mostly, it is popular in Ahmedabad and Maharashtra all those states. So apart from the assembly but currently various state government they are working on the plot reconstitution or land town planning scheme.

And government of India recently they have come up with sub-schemes or they are going to bring the sub-schemes on the new urban extensions, using the plot reconstitution or the town planning scheme in a great way. So therefore if you understand the basic concept of the town planning scheme or the plot reconstitution, it will be added benefit for you and it will be required income in near future.

The fourth is the partnership model. Here neither you are acquiring land neither you are making robust development control neither you are pooling the land but here you are making the development either jointly or by some private developer. So there are two methods, it can be guided or it can be joint land development. Here you are giving authority to the private player to acquire develop and dispose the land.

So in this method here the efficiency or the expertise of the private developer is used in this method. So these 4 methods are there where we use the land supply management. Now let us see that this we have discussed.

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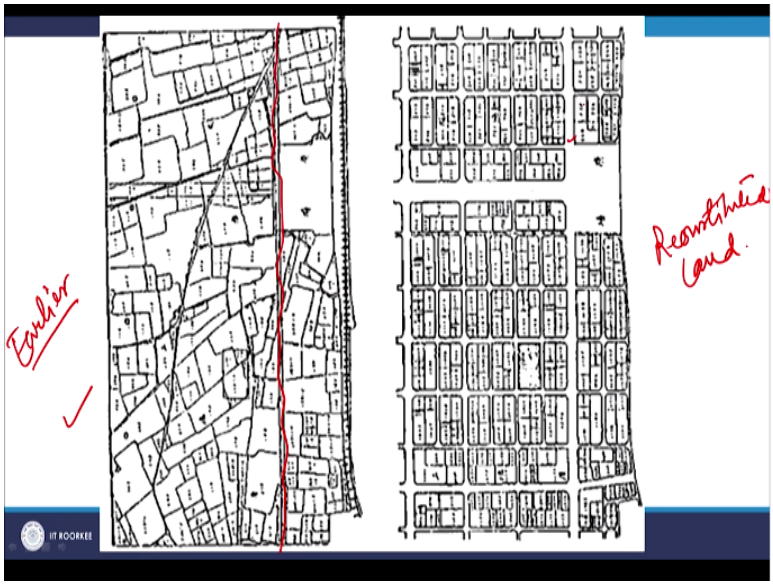

Now some examples how the land pooling is done, you can see that this is some random pictures I have collected from the websites so the picture in the left side this is showing this earlier condition where land is not managed and this is the reconstituted land. So you can see that existing streets, these are existing streets, these are given importance to make the new road and another set up plots, new plots are created which is much more regular in nature and much more all the plots are having the accessibility.

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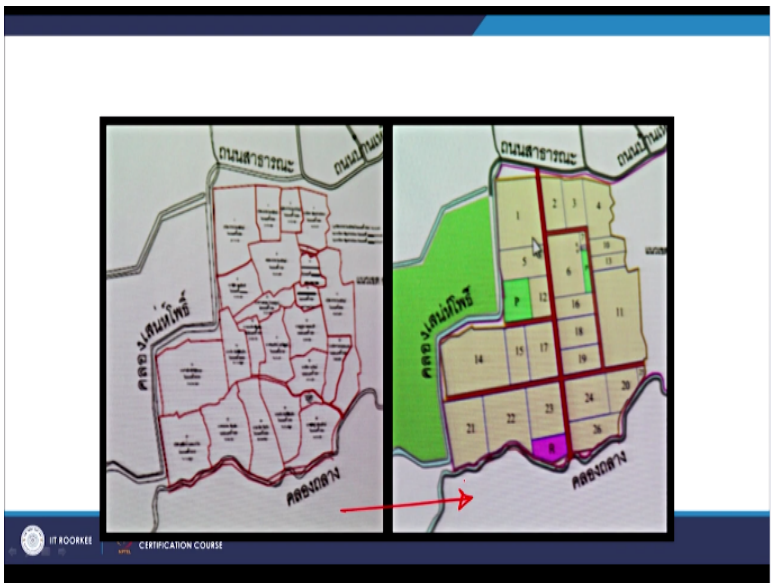

This is another picture you can see how the land the plot reconstitution or readjustment is done.

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These are some pictures from the Gujarat. So here you can see that this is the existing or the earlier scenario. This is the proposed scenario. There are a lot of examples you will find on the published literature or in the websites. You can see in for better details. Now if you see this picture in little greater details, you will find that they have tried to integrate the existing roads.

So one of the major challenges in the land pooling is that how to integrate the existing feature like existing roads, water bodies, open space, etc whereas the land readjustment scheme or town planning scheme has much more advantage than the land acquisition because it is a participatory method and here there is a win-win situation. Government and the landowners they share the more or less equal benefit sharing.

But the issue is that the proper distribution of the facilities like accessibility of the road in terms of width of the road, nearness to the park or playground, the water bodies and all this existing feature. So that is basically demands that demands a very critical and the robust special planning or technical planning which is required but otherwise this process is a tested process and which takes sometimes longer time but in comparison to the land acquisition, it takes much lesser time.

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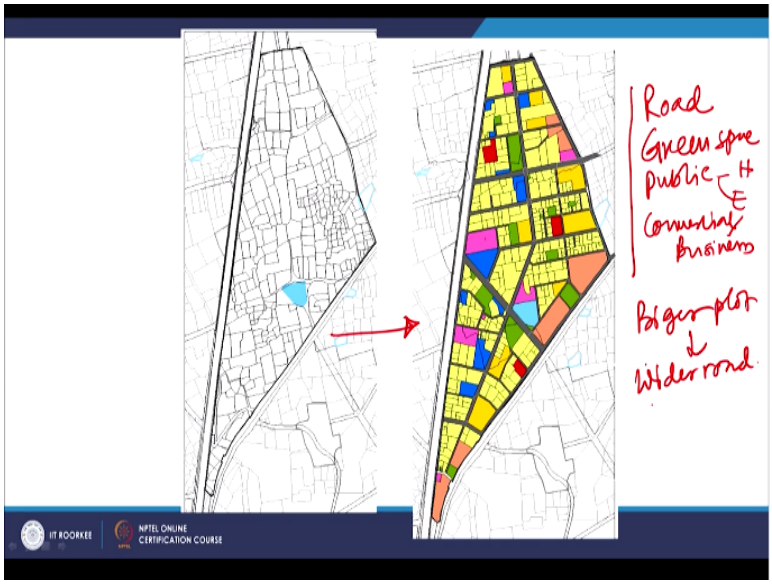

This is another example you can see that how efficiently the condition of the land from earlier to present is maintained and here you can see that in terms of road, green space, then public, semipublic, in terms of health and education is also given and some commercial or business area is also provided to create the employment and also all the plots are given accessibility and in giving the accessibility you can find also that bigger plots are getting the access of wider roads.

That should be the approach whereas smaller plot should be given narrower road. So there should be this kind of distribution where you can create large amount of public amenities, water supply, water bodies, open space, road and other job generating activity, for example commercial areas and the public, semipublic areas and also there will be the even distribution of the road and accessibility in terms of their width and the open space, the location of the open space.

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Now let us see another example, this is another example you can see. So they have tried in a better way how it can be organized.

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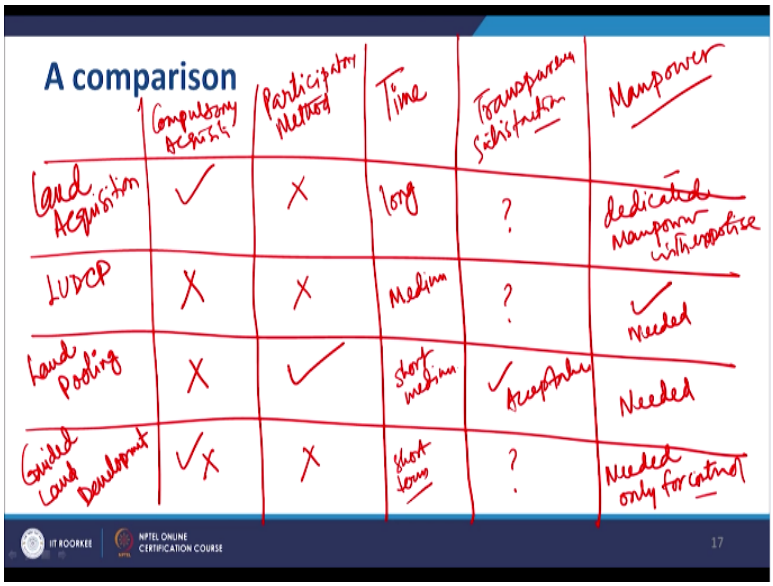

Now if we compare the situation, so we have 4 models, one is land acquisition, then land use and development control plan and then land pooling and then guided land development. Now out of this 4 methods, the compulsory acquisition of the land is done only by the land acquisition method, remaining 4 methods use a compulsory land acquisition, in guided land development there could be land acquisition in some cases.

Then, in terms of participatory method you can see the land pooling is the best method which gives the participatory method whereas this is not and in terms of the time consuming land acquisition is a long-term activity, land use is a medium, it depends land pooling, the short-

term or medium whereas guided land development can give you very efficient and short-term result because it is done by the private developer or private entities.

And then transparency and the satisfaction, it depends where the land pooling has the most successful or the acceptable case because all the plan is done from the beginning with it in a participatory method where land acquisition or LUDCP it depends on the situation. So these are the parameters by which you can compare the situation. So apart from the time, transparency and then also you can see the fact of manpower.

That what kind of manpower you need for that, for land acquisition yes you need dedicated manpower with expertise. In LUDCP also you need that and land pooling definitely it is needed. In guided land development, you need only for control. Here you are making only control mechanism. Remaining acquisition and development is done by the private entities. So if you compare these 4 methods you will find that no one method will give the maximum or all the advantages.

So therefore best on the situation you can use all types of development, land assembly management like if you have some large infrastructure project which public entity has to do, for example water supply or solid waste management all those you have to acquire the land or if you want to develop a residential estate or commercial estate you can go for land readjustment and town planning scheme.

Or if you do not want to do all this because you do not have much time or much manpower capacity definitely land use and development control plan will be another line of action but definitely the outcome in terms of infrastructure and the planned outcome which we get in the land readjustment and the town planning scheme will not be similar in the land use and development control plan.

Because it is basically ultimately it is an indirect control and fourth that is the guided land development where you need immediate results and immediate projects that can be done by guided land development. The whole New Delhi Airport Extension has been done using this method, so will share some of the documents, you can go through and you can understand and select appropriate method for your own context.

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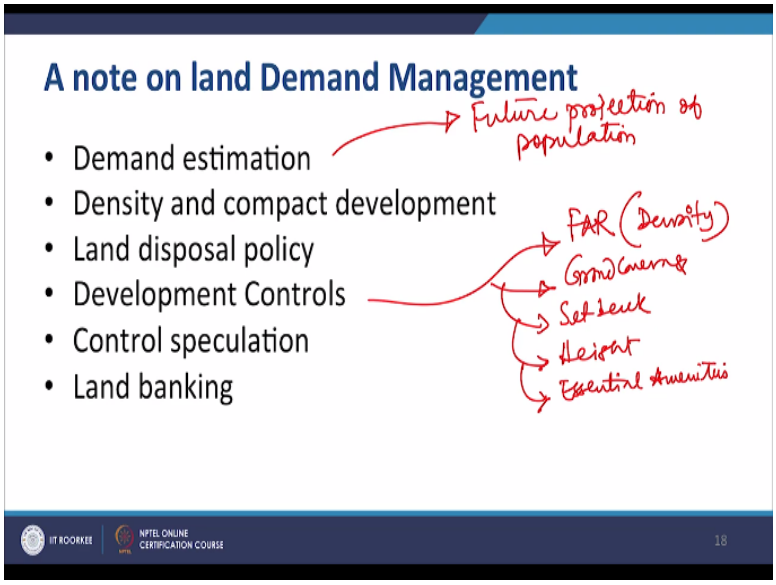

Now after this discussion let us have a discussion on the land demand management. So we started from the land information system and its various elements. Next, we discuss the land supply management and after you have the land and it is recorded properly, it is kept properly, it is verified properly but how to manage the demand, how to distribute the land in a better way.

So let us see some of the points that how we can manage the demand in a better way. The first is the demand estimation. Now in some of the lectures when we talked about the planning, so demand estimation is always done by the future projection of population and based on that if you apply the analogy of the density you will get the land requirement in terms of residential, commercial, green, industrial and so on.

So demand estimation has to be done based on your current land value and based on the projected estimation of the future population. The second is the concept of the density and compact development. A thumb rule is that more the density more the number of population will be accommodated in a particular area but there is a threshold beyond which if you increase the density it cannot take the pressure on the infrastructure.

For example, in your city if you take any residential area and the population and if you divide the population by the area, you will get the population in unit area. So that is your gross density but can you increase suppose it is coming 200 or 300 population per hectare, so can you increase further 800 or 900, the answer is no because if you redensify or if you allow

more FAR or more incentive for densification, maximum it can go another 100 like 300 or 400 persons per hectare.

But if you can plan it properly for the new areas, new extension, green areas and as we discussed for the land supply management and you allow dedicated FAR in such a way so that the design density is becoming 600, 700, 800, 900 or 1000 you can achieve much more population density. If you have seen the large satellite townships or the growth centers around Delhi, Mumbai or Calcutta for example say Noida, Greater Noida, Dwarka, Faridabad you will find that those areas are having large or high-storeyed buildings.

And also there are wider roads, now the thing is it does not mean that it is a low density development, actually those areas are compact and very high density development in comparison to the existing very flat kind of development where you will never get an adequate road width. The reason being that here it is a planned development we have kept the adequate space for infrastructure like road, water supply everything beforehand.

And remaining land you have allowed very high density development for example 800, 900, etc. So that is possible so if you analyze and apply the concept of density and compact development beforehand, it is possible. There is another concept which is being discussed in the planning or the national scenario, international scenario, the transit oriented development. In short, it is TOD.

Now transit oriented development basically ensures compact high density development around the transit corridor. In most of the Indian cities now they are facing or they are developing the metro rail or the ERTMS corridors, along these corridors or the bus corridors you can develop high density development. So that becomes another approach to develop high density areas. Next is the land disposal policy.

If you have land, you got some land, how you dispose the land, what type of use you particularly allocate like in land use map you have allocated the residential, commercial, etc but with residential land are you going to allocate the land only for the developer, are you are going to allocate the land only for the individual private land owners or you are going to allocate the land for cooperatives or some companies so that they can build their employees housing or you are going to allocate the land for the slum rehabilitation project.

So it depends on the scenario of your city, the existing situation, the demand and the variable demand for each and every category of the residential requirement. Similarly, for the commercial area if you are going to dispose the land which category you will give the priority. Are you going to give the priority for the business sector or you are going to give the priority for the retail sector or manufacturing sector or the wholesale sector?

So based on your variable priority you can make the land disposal mechanism. For an example, I have shown in some of the slides some pictures of the Newtown Kolkata and some other parts. Some of the projects now it is that people propagate or they give priority to the cooperative development because cooperative development they can achieve high density; they can achieve better housing but not through developer.

And also you can provide some amount of land through the developer because developer they can achieve really high density development within stipulated time. So but there are other aspects like whether the authenticity or the credential of the developers are good or not. So those we will discuss in separate lectures but the thing is the land disposal based on various categories is very important factor.

Then, development controls, after you allocate the land and dispose the land how you are going to control the development. Few parameters you should not forget for example in the development controls you should mention the FAR is very important element which basically determines the density. Then ground coverage, set back, building height and essential amenities.

We have told you earlier that in net land use when people develop their plot level land uses, so at the plot level there could be requirement of some local level other land users. For example, a developer is developing a large township of say 50 acres or 100 acres, so within that 50 acres and 100 acres if they are going to accommodate few lakhs of people then they will definitely need the school, the educational facility, commercial facility.

Now it is the developer's duty to develop all those public amenities and facilities. So when you make the development control, do you have that control that developer takes a residential plot and he has to develop mandatorily those public amenities or facilities that kind of facility

should be there. So apart from FAR ground coverage, set back, infrastructure everything they have to you have to mandate these kind of elements in your development controls.

Next is that then controlling the speculation, since the land is the very scarcely commodity and it is costly commodity and it is limited commodity as we have told earlier also there is a speculated market of the land and there are land reselling cases, reselling of the apartments and the houses. There are various examples that we have seen in world in various cities that multi-storey apartments are built but very few number of people are occupying that.

Those cities are called ghost cities because people have made their second, third, fourth, fifth, sixth apartments and they are not leaving, they have occupied or they have purchased it for their investment. So those kind of situation is not desired in towns of India even though this situation is not much more evident but this in near future it can come unless we control the speculation in a better way.

So the objective of the controlling speculation is that that land should be distributed or the land property should be distributed evenly in a transparent way and it should be controlled in such a way so that reselling or the purchasing of a second hand or third hand land or property becomes easier and so that people common citizens can purchase that within their affordable limit so that is possible if government takes a strong action or strong part in land transaction and also in the housing market.

Government should not leave the housing market totally to the development along with the assembly of the land government should build some amount of housing always and some amount of residential plots always in an affordable rate so that the speculated market and the real estate is controlled at the same times. So we have seen that in India few of the cities they have done this kind of practice and as a result the housing market is stable on those cities.

So that should be done for all the cities. Then there is a concept of land banking. After you do everything, do you have enough land reserved for your future development of your infrastructure, suppose in future your population will increase and you need another decentralized treatment plan (()) (41:50). So do you have that land? Because in future when you are going to acquire the land, the land prices will be very high.

So it is possible that if you acquire the land right now and you reserve some amount of land for the future activity, future infrastructure, it is better for your governance. For example, in the case of Delhi Development Authority, they have acquired some amount of land for the future development and as a method as an advantage as a benefit of that they could develop so many township, so many infrastructures in and around Delhi.

So it is also a part of proactive planning by which you can foresee your future and you can assemble the land, keep some amount of land as a bank for your future use. So some of the cities they have already done. So if you have the land banking, it is good, you can intricate with your planning and the GIS based land record management and if you do not have, please think about it and start right now.

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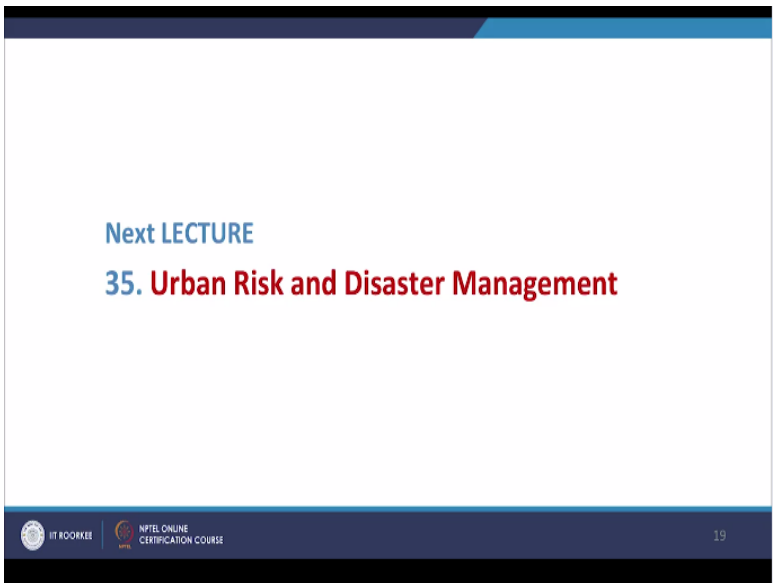

So with this we conclude today's discussion. The next lecture will be urban risk and disaster management in the cities. So quickly I summarize today's lecture. Today, we discussed 3 aspects by and large, first aspect is the land information system by which we can use better technology and systems to ensure an effective land registration we can ensure a ground truthing and errorless land record management.

And also we can ensure the dissemination of the land to the people. Second, we discussed the land assembly management, basically 4 methods we discussed in a comparative scenario. One is the land acquisition, second is the using land use control tool, third is the land pooling mechanism or land readjustment mechanism, fourth is the guided land development and then

we also discussed that land assembly is not sufficient. We need to know how to manage the demand.

In the demand management, salient features like land disposal, making compact city development, future estimation and land speculation management all these are very essential part of your land management. I ended the discussion with land banking. So in your future please ensure that slowly, gradually you make a situation or you create a situation where some amount of land is reserved for the future public purpose, future public infrastructures. With these words, I conclude today's lecture. Thank you very much.