

Operations Management
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Lecture - 18
Plant Location: Case Study on Uttrakhand

[FL] friends, welcome to session 18 in our course on operations management. As you are aware that we have already finished discussion of 3 weeks and currently, we are discussing the fourth week and our topic is plant location in plant location, today is the third session that we are discussing and earlier, we have already discussed the basic aspects of operations managements scope objectives fundamental nature of operations management.

We have studied product design and development. We have also studied sales forecasting or demand forecasting and now we are seeing that if a company has decided that what they want to produce where the plant must be located and in plant location, we have already discussed the facilities planning, what are the basic thoughts that must go while we select a plant for or select a location for our plant; what are the thoughts that we that must come to our mind when we are taking a decision related to the location of our facility or the location of our factory or the location of our enterprise.

We have seen; what are the factors governing this decision and we have seen that there are internal factors external factors, then there are controllable factors non controllable factors, there are government policies there are rules and regulations and guidelines that have to be followed when we take this most important strategic decisions of deciding where we are going manufactures the product that we have developed during product design and development and that is the basic thing that we are studying currently in this week.

In next week, we will see that once, we have decided that how the plant is going to look like inside the plant how and where which facilities will be located. Once, we have decided the region where we are going to put our facility or the factory within the factory which facility will be at which location; for example, the residential quarters the manufacturing plant the air conditioning unit the grounds and the effluent treatment plant

which facility is look going to be located at which particular section that is going to be discussed in next week and will fall under plant layout.

So, currently we are discussing plant location that how we can decide that where we want to produce and today's session is focused on case study of Uttarakhand as IIT Roorkee is established in Uttarakhand. So, we have decide that we will try to see that why lot of companies are coming and setting up their facilities in Uttarakhand will try to highlight maybe in another 15-20 minutes the maybe attractiveness of Uttarakhand as a industrial hub that why Uttarakhand is being chosen as a choice as a maybe attractive place for setting up of manufacturing facilities, we will see; what are the incentives given by the government of Uttarakhand for promoting the development of industry in the state.

So, we will try to see that similar policies may be existing in other states also and we want to understand that it is the government policies, it is the industrial climate that is prevailing in the state that motivates the industrialist to set up there plant in that particular state there are number of such examples where a company wanted to set up a facility in a particular state, but then had to shift because of maybe public unrest or because of the government apathy or maybe because they were not able to convince their employees to go and work in a particular states.

There are number of problems associated when you have to decide that which is going to be the most optimal location for setting up of the plant and Uttarakhand as a state is promoting the industry in order to give more and more employment to the people of Uttarakhand and what are these facilities specially for MSME industries that we are going to see today in today's session.

So, let us see first the case study of Uttarakhand. So, policies of Uttarakhand government directly, we are starting from the policies the MSME.

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Policies of Uttarakhand Government

- MSME (Micro Small Medium Enterprise) policy
- Special Integrated Industrial Incentive Policy (Hill Policy)
- Central Capital Investment Subsidy Scheme
- Mahila Udyami Vishesh Protsahan Yojna
- Chief Minister Swarojgar Yojna

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The full form as I have just use the word of the notation MSME in the introductory part of today's session, MSME stands for micro small medium enterprise. So, we can say micro small and medium enterprises. So, we have developed at Uttarakhand MSME policy that the government is going to support the industry focused on micro small and medium sector enterprises, then there a special integrated industrial incentive policy which is commonly called as the hill policy.

So, that is another policy which has been framed by the government of Uttarakhand in order to improve the facilities or the industry in the hill regions, then central capital investment subsidy scheme. So, central capital investment subsidy scheme is another policy, then related to ladies you can see there is a Mahila Udyami Vishesh Protsahan Yojana.

So, Mahila Udyami means for female entrepreneurs there is a special package or special policy which is supporting them to maybe start earning their livelihood start small scale business at the village or at the town level and become self sufficient self reliant as well as empowered. So, Mahila Udyami Vishesh Prasaran Yojana is another [FL] by the government of Uttarakhand Chief Minister Swarojgar Yojana, there is also maybe self employment scheme also started by the government of Uttarakhand.

So, we can see that there is a broad spectrum of schemes focused on improving the industrial health of the state in order to develop industrial climate in the state more and

more people within the state can contribute to the industrial growth of the state with the help of these schemes as well as people from other states can come and take advantage of these schemes which have been launched by the government of Uttarakhand and can lead to maybe more profit making enterprises because we will see in today's session there other schemes also which are promoting the industrialist and entrepreneurs from all across the country for setting up their plants in the state of Uttarakhand.

So, this gives the broader policies which are framed by the government of Uttarakhand in order to improve the industries in the state then there is another list of policies of the Uttaraakhand government.

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Policies of Uttarakhand Government

- Freight Subsidy Scheme Gazette
- Mega Industrial and Investment Policy
- Startup Policy
- Purchase Preference Policy
- Mega Textile Park Policy

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Freight subsidy scheme gadget mega industrial and investment policy start up policy there is another policy government of India has also focused on startup maybe startup India; standup India, there is a policy by state government, central government also. So, there is a startup policy by the state purchase preference policy mega textile park policy.

So, textile; textile park has been initiated. So, that is basically to improve the textile industry of the state. So, we can see that startup policy purchase preference policy as the words are self explanatory purchase preferences for purchasing preference will be given to the products produced in the state at least that is what I understand from this policy. So, the we our target is to understand not the nitty gritty of each and every policy, but we are studying plant location and in that one important factor is the trust of the

government towards improving the industry and we can see that there is a long list of policies established by the government for improving the industrial health of the state.

So, we may not be going into the each and every policy because each and every policy will have a policy document which may run into number of pages who is eligible who is not eligible what are the prerequisites how you have to apply. So, we are not to going go into the nitty gritty of each policy, but we will definitely like to understand that what are the general policies which decide the location of a plant in a particular state or in a particular region. So, here we have seen two important maybe lists of policies specifically framed by the government of Uttarakhand, then coming on one policy let us take an example that is the MSME policy.

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MSME Policy

- Government of Uttarakhand has sanctioned the “MSME Policy-2015” for promoting investment in the MSME Sector through Investment Promotion as well as to incentivize MSMEs
- The policy aims at utilizing local resources and to generate employment opportunities and promoting self employment, skill development in the youth.

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So, the government of Uttarakhand has sanctioned the MSME policy or maybe the frame would the MSME policy 2015 for promoting investment in MSME sector MSME full form we have already seen in the beginning micro small and medium enterprises. So, in micro small and medium enterprise is the government is giving lot of trust for setting up of these type of enterprises in the state how they are doing it through investment promotion as well as to incentivize the MSME.

So, government is giving lot of incentives to entrepreneurs to industrialist to businessman who are setting up m s who are setting up the plants as per the MSME policy of the state. So, the policy aims at utilizing the local resources is as Uttarakhand is

a hill state. There is lot of maybe flora and fauna as well as the forest cover in the state. So, there can be a lot of forest waste that is developed in the state.

So, the policy aims at utilizing the local resources. So, resources may not be the material only the resources can be the human resource also the resources can be the infrastructural resource also to the policy aims at utilizing the local resources and to generate employment opportunities and promoting self employments skilled development in the youth. So, the policy is focused on empowering the youth empowering the youth by skill development by making them learn new and new skills.

So, that they can become self reliant self employed because Uttarakhand has history of people young people moving to other states for employment. So, the government has given a thrust on developing the ear for coming up with employment opportunities for the state youth or the youth of the state where they can and work within the state only now in order to develop since our topic is plant location.

So, from location point of view the state has been divided into 4 categories.

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Category	Regions included
A	Districts of Pithoragrah, Uttarkashi, Chamoli, Champawat, Rudraprayag and Bageshwar.
B	Districts of Pauri Garhwal, Tehri Garhwal, Almora, All hilly development blocks of District Dehradun other than Vikasnagar, Doiwala, Sahaspur and Rajpur. All hilly development blocks of District Nainital other than Haldwani and Ramnagar

So, we will see the categorization of the state and since the different locations, there are few areas in Uttarakhand which are hilly in nature there are other areas which are plane or relatively plane in nature. So, the whole state has been divided into 4 categories there is categories A, B, C and D and the details of each category are given here category A

includes the districts of Pithoragarh, Uttarkashi, Chamoli, Champawat, Rudraprayag and Bageshwar.

Category B includes districts of Pauri, Garhwal, Tehri, Garhwal, Almora and all hilly development blocks of district Dehradun other than Vikas Nagar which is relatively plane, Doiwala is plain, Sahespur is plane and Rajpur all hilly development blocks district Nainital other then Haldwani and Ramnagar which are relatively plane.

So, basically the state is divided into 4 zones. Now from plant location point of view, whenever industrialist would like to set up a facility or setup of factory, he can take a decision that which particular category or which particular district is most suitable for his kind of manufacturing activity for his kind of service industry for which he wants to set up his enterprise.

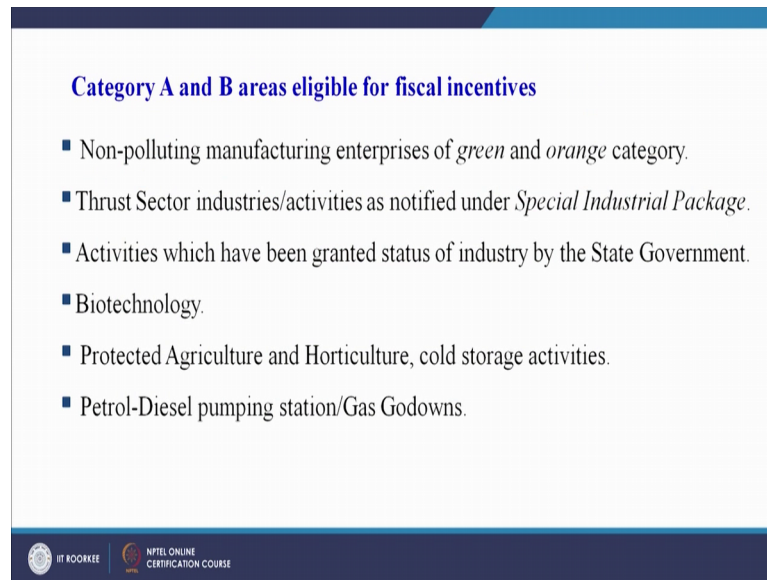
So, 4 category their and each category may involve different types of incentives and even may categorize the industry also for example, in category a only these type of industries can be set up or they will be incentivitaise or they will be given incentivize for other category of areas or district some other type of industry may be the focus and only that type of industry will get the incentives. So, A and B is given, similarly C and D categories are also there.

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Category	Regions included
C	Regions located above 650 mtrs from sea level of Raipur, Sahaspur, Vikasnagar and Doiwala development blocks of District Dehradun. Ramnagar and Haldwani development blocks of District Nainital.
D	Districts of Haridwar and UdhamSingh Nagar Remaining area of District Dehradun and Nainital (which are not included in category 'B' and 'C')

So, maybe one of the criteria for categorization is the reasons located above 650 meters from the sea level. So, here we can see there is another categorization that is C; similarly category D. So, the whole state is divided into 4 categories and now categories specific industry has also been outlined that we will see.

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Category A and B areas eligible for fiscal incentives

- Non-polluting manufacturing enterprises of *green* and *orange* category.
- Thrust Sector industries/activities as notified under *Special Industrial Package*.
- Activities which have been granted status of industry by the State Government.
- Biotechnology.
- Protected Agriculture and Horticulture, cold storage activities.
- Petrol-Diesel pumping station/Gas Godowns.

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So, category A and B; there eligible for fiscal incentives are financial incentives what type of industries can be setup in category A and B. So, if you remember, A and B; we have outlined; few districts are in category A few districts are in category B. Now A and B are together here so, A and B; you can have non polluting manufacturing enterprises of green and orange category.

So, there is a categorization of the enterprises. So, we have here we have seen two. So, we are not going into the categorization of the enterprise or the color coding of the enterprises, but we can see that non polluting manufacturing enterprise are focus area in category A and B first sector industries as notified under special industrial package. So, there is a special industrial package which notifies that this is the thrust area this type of industries we must develop in a particular area of the state. For example, it can be herbal or a pharmaceutical industry which can be developed in a particular zone.

So, the zoning has been done and if you want to setup your plant, in a particular state today's case studies Uttarakhand and yours is a pharmaceutical industries, you cannot set up a pharmaceutical industry anywhere, you feel like because the state has already

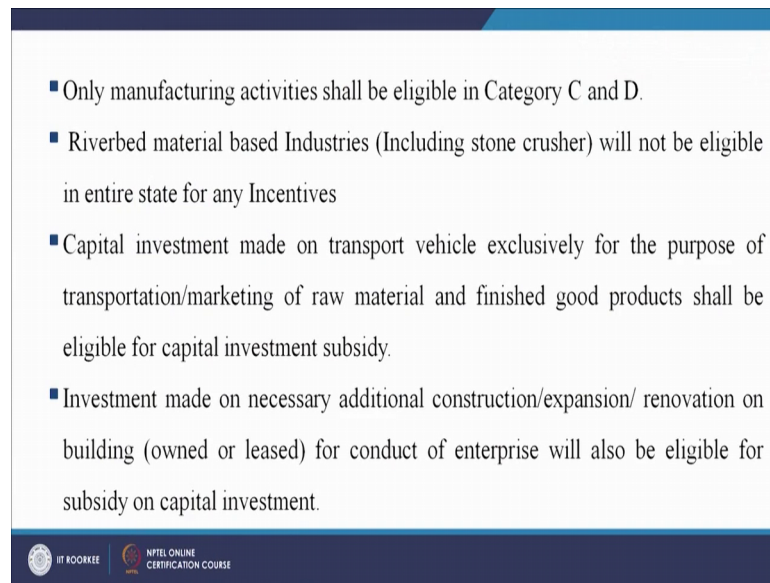
categorised the complete area into 4 zones and within the zones also as per the special industrial package pharmaceutical I am taking an example may be given a particular area that pharmaceutical industry will be developed in category this only and is as in our case we say category A and B.

So, you have to set up the plant there only I am not saying that pharmaceutical is specifically for category A and B I just taken an example that a particular area may be here for one type of industry only activities which have been granted status of industry by the state government they can be set up in category a and B district biotechnology can be in category A and B areas protected agriculture and horticulture cold storage activities can be in category A and B.

So, it is for; it is the; it is making the life of the entrepreneur or the industrialist easy because suppose he wants to set up a cold storage facility it is very well known to him before he starts searching for the plant location that cold storage activities are being promoted in category A and category B areas of the state of Uttarakhand. So, he can only focus on those areas and try to locate a site where the god own or the cold storage facility can be developed.

So, in a way the government is helping the entrepreneurs or the industrialist in the in their process of plant location or finding out the exact location or optimal location where they can set up there facility similarly petrol diesel pumping station gas godowns are also maybe in category A and B areas only or category A and B regions only manufacturing activities shall be eligible in category C and D.

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■ Only manufacturing activities shall be eligible in Category C and D.

■ Riverbed material based Industries (Including stone crusher) will not be eligible in entire state for any Incentives

■ Capital investment made on transport vehicle exclusively for the purpose of transportation/marketing of raw material and finished good products shall be eligible for capital investment subsidy.

■ Investment made on necessary additional construction/expansion/ renovation on building (owned or leased) for conduct of enterprise will also be eligible for subsidy on capital investment.

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So, we can see that biotechnology focus is in category A and B regions manufacturing activities are eligible for category C and D regions riverbed material based industries including stone crushers will not be eligible in entire state for any incentives.

So, they have categorically mentioned that a specific type of industry will not get any incentives capital in investment made on transport vehicle exclusively for the purpose of transportation marketing of raw material and finished good product shall be eligible for capital investment subsidy. So, there are different types this is one example which is on transport vehicles, but there are number of such examples where the capital investment subsidy is being promoted by the state of Uttarakhand.

So, investment made on necessary additional construction expansion renovation or building whether you have you own that building or you have lease that building for a long period of time for conduct of enterprise will also be eligible for subsidy on capital investment. So, you get subsidized if you are doing some renovation or you are expanding the already in existing the facility. So, the government is supporting this type of activities in order to improve the industrial base within the state there are number of fiscal incentives and concessions.

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Fiscal Incentives and Concessions

- Investment Promotion Assistance (Capital Subsidy)
- Interest Subsidy
- Reimbursement of VAT
- Concession on Stamp Duty
- Reimbursement of Electricity Bills
- Special State Transport Subsidy

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We have seen 2-3 types of things we have seen that how the state is promoting the industry they have different types of policies within the policies we are focused on MSME sector only within MSME we have seen the whole state is divided into 4 A, B, C and D regions and each region has been year made for a specific set of industry. So, apart from that we have seen that they are giving capital subsidies also.

So, fiscal incentives and concessions are other promotional maybe schemes of the government in order to improve industry some of the schemes are listed here. There is an investment promotion assistance that is capital subsidy is given by the government interest subsidy is given reimbursement of vat which is very important these days GST has been implemented.

So, the government has to relook and see that how they can implement or they can incentivize the industry through maybe some reduction in GST, I have no idea about that I am not an economist, but maybe some re looking at the GST regime can be done then concession on stamp duty is another a good incentive for the industry reimbursement of electricity bills special state transport subsidy as we have seen that there is a capital subsidy on the transport of raw material as well as the finished good of good from the industries within the situated or located within the state of Uttarakhand.

So, special state transport subsidy is available then coming on to the infrastructural support.

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Infrastructural Support

- Establishment of Land Bank
- Infrastructural development fund for MSMEs
- Special Industrial Estate for MSMEs
- Establishment of New Industrial Estates

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We can see that there is an establishment of a land bank then infrastructural development fund has been created for MSME is in special industrial estate for a MSME has been created and establishment of new industrial estates is in the maybe offering for the people who want to come and set up their industry in the state of Uttarakhand. So, again I am reading it for you for better maybe at least few things can be there in our thinking process whenever we talk of plant location the special industrial estate maybe sometimes we develop special areas for MSME clusters only for MSME type of industries only where you have only micro medium and small scale industry.

Similarly, industrial estate maybe as we have seen a textile park has been created similarly new industrial estates can be identified and created maybe the government is promoting this type of activities where industries can set up if you if you remember I have discussed this thing in the earlier session also that whenever a big manufacturing u EST unit is established they may not be manufacturing each and every part that goes into their product for example, a car is being manufactured. So, the company may not be making each and every parts of component or equipment that goes into the car they will be maybe majorly involved in assembling the car.

The ancillary units will be developing the parts or the components for the car similarly whenever you have a industrial estate there can be industries which are supplementing each other which are complementing each other. So, there can be a there can be product

made by company A and there can be another product made by company B, at A and B can combine and make a product C which is may be final or and product which can go into the market.

So, you have a industrial estate we are different types of companies can be there or maybe same type of companies can be developed as a park maybe for example, of software park where you have different software companies working together in different areas or different zones then establishment of multistoried estate upgradation of existing industrial estates. So, they are both the things are possible we can the government is developing new industrial estates as well as the government is also focusing on expansion or renovation of the old are existing industrial estates also, then establishment of vendor and ancillary parks as I have already told if we have a very big or maybe large scale manufacturing unit coming up in the state then the government is promoting the development of the ancillary units in the vicinity.

So, that the transportation cost from the ancillary unit to the main plant can be minimized or can be optimized. So, the establishment of vendors and ancillary parks we are coming or government is promoting that type of setup then interventions under the cluster development scheme now in cluster development scheme government is focusing on the development of clusters. For example; Roorkee at one time was famous for the surveying equipment. So, coming up with the international challenge maybe the manufacturers are not able to match up with the products that are coming with the open maybe market from the other countries also.

So, maybe a cluster can be developed where a central facility can created where we can have all the latest machines and equipment which can maybe help the industry to come up with the quality that is matching the quality been provided by the international players. So, that kind of cluster development approach is being promoted by there for the MSME sector by the government of Uttarakhand. So, that a cluster is able to match up the quality of the product being produced by the international competitors.

So, the state is coming up with number of schemes already there a number of schemes as we have seen in the first and the second slide where they are trying to promote the industry to come they want the industry must set up their plants in Uttarakhand. It is going to help the economic health of the state it is going to provide employment to the

youth of Uttarakhand it is only going to lead to the skill development of the youth of Uttarakhand.

So, the government is giving lot of focus for the industrial development of the state and it is not only the state of Uttarakhand, there are other states also which are focusing on the development of industry since we are located at Uttarakhand. So, we have seen that plant location is an important of topic we have also seen in facilities location we focus on plant location and the plant layout within plant location we have seen that there are number of factors that influence our decision related to a selection of a plant location and in today's class we have seen or in today's session.

We have covered the case study of Uttarakhand and what are the policies the government is following in order to improve the industrial maybe belt of Uttarakhand with this we conclude the today's session and a next session, we will focus on the theoretical aspects behind the plant location.

Thank you.