Sociology and Resource Management
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Module - 01
Natural Resource Management and Different Theoretical Approaches
Lecture - 02
Common Pool Resource Management

Hello everyone. In today's lecture, I will be talking about Common Pool resource management. In the last lecture, we looked at different kinds of properties and how they are managed under different property regimes.

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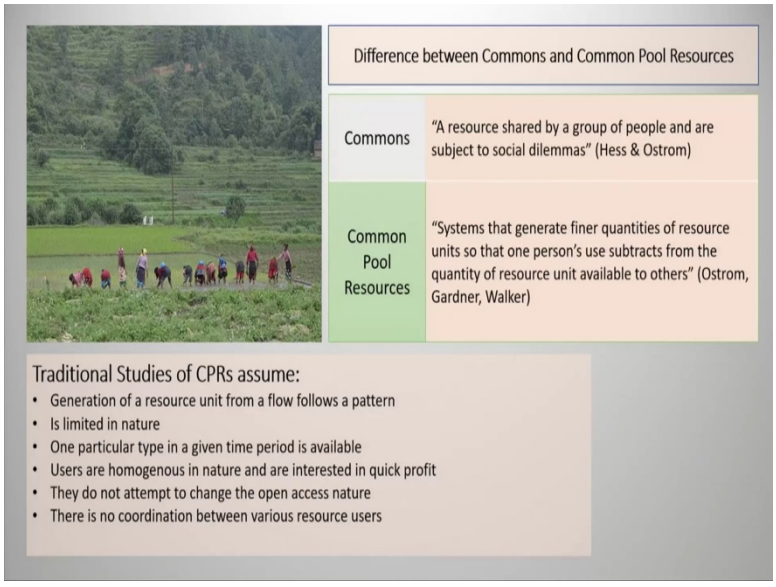

However, today, we will be focusing entirely on one kind of resource, that is CPRs or common-pool resources. At the very beginning, it is important to point out the difference between Commons and CPRs to avoid any confusions. According to Charlotte Hess and Elinor Ostrom, Commons are a resource shared by a group of people and are subject to social dilemmas.

Common pool resources, on the other hand, refer to the systems that generate finer qualities or quantities of resource units so that, one person's use subtracts from the quantity of the resource unit available to the other.

Ostrom, Gardener, and Walker have identified or defined common pool resources, as the systems that generate finer quantities of resource unit so that one person's use subtracts from the quantity of resource unit available to the other. Most political economists in their traditional studies of CPRs have worked under the assumption that the generation of resource unit from a resource follows a pattern, is limited in nature and of one particular type in a given time period. The users are considered to be homogenous or similar in nature, interested only in making profit in a short period of time. The resource is assumed is assumed to be free for everyone to exploit.

The resource users do not make any attempt to change the open-access nature. In fact, there is no coordination between various resource users. This way of looking at CPRs was challenged by newer empirical studies because it failed the test of generalizability. Data from the field has shown that the traditional CPR theory is successful in cases where there is no coordination among the resource users. However, it fails in explaining situations where the resource users are able to come into agreements with others regarding the sustainability of the resource. Later, in this lecture, we will study about such self-governed common-pool resources and how it has been possible to sustain them.

Later in this lecture, we will discuss about such self-governing common pool resources with examples and how it has been possible to sustain them. But, before we do so, let us analyze what characteristics determine a common pool resource.

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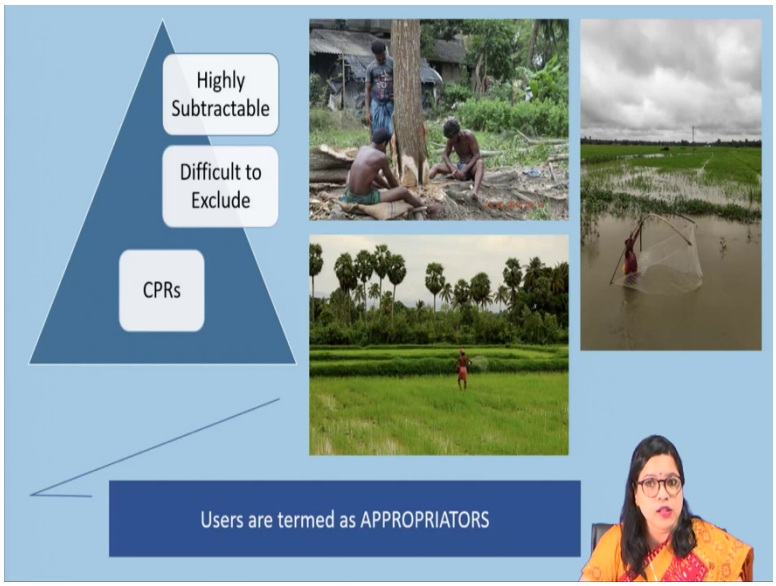

According to Ostrom, Gardener and Walker, traditional common pool resources have two qualities. They are highly subtractable and difficult to exclude. This means, one person's use of the common pool resource can reduce its availability for the others. For example, if people are trying to use the wood from the forest, then one person use of one log of wood or one tree would reduce that resource to be used by other people.

Similarly, if a wood chopper chops all the trees in the forest for their carpentry work there would not be any wood left for other wood cutters. Also, in a common pool resource it is difficult to restrict users from accessing the resource without any physical boundaries that have been permitted by the property rights. For example, if there is a lake, then everyone is free in the village to go to the lake and fish the fishes. But if you have a physical boundary then it is difficult for people to access it.

It will, if we take another example, be even possible to prevent the trespassers from exploiting a village lake only by putting up a boundary wall around it. However, the wall can only be constructed if the lake becomes a private property. As common pool resources are limited in number therefore, it is difficult to restrict the users.

The multiple kinds of users such as the woodcutters, fishermen, agriculturalist etcetera who can access and use the resources have been termed as appropriators by Ostrom, Gardener and Walker. To better understand the process of appropriation we need to look into how appropriators use the resources.

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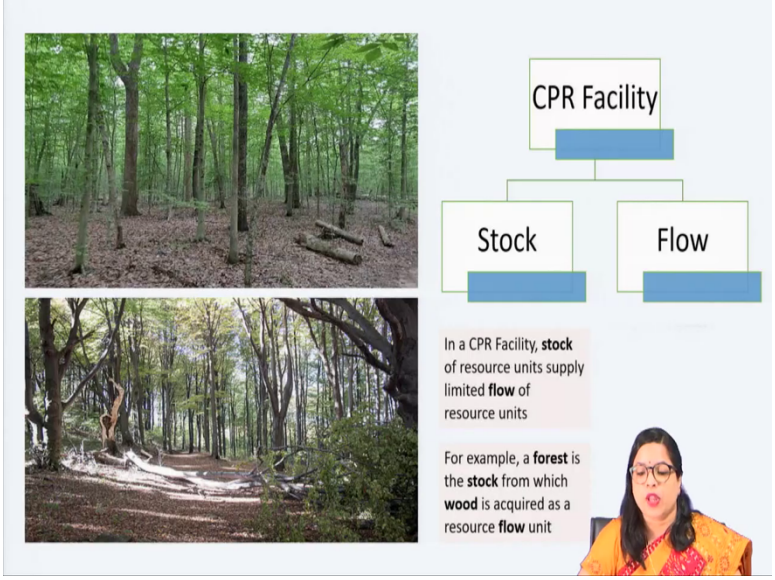

Imagine a forest which everyone in the village can access and use its product making it a common pool resource facility. There is a stock of resource units like the wood from the trees that supplies a flow of resources, which is again limited in number. Because, if you imagine a forest and if you go on cutting down the trees one by one then there would be a point where you would not be left with any trees to explore.

So, if a tree is being cut down, the wood is a resource unit acquired from the stock of forest and the appropriators in this case use the woods, they derived from the forest. Given the scenarios, what are the problem faced by the users or appropriators in various common pool resource situation. The problems can be clubbed into two main types.

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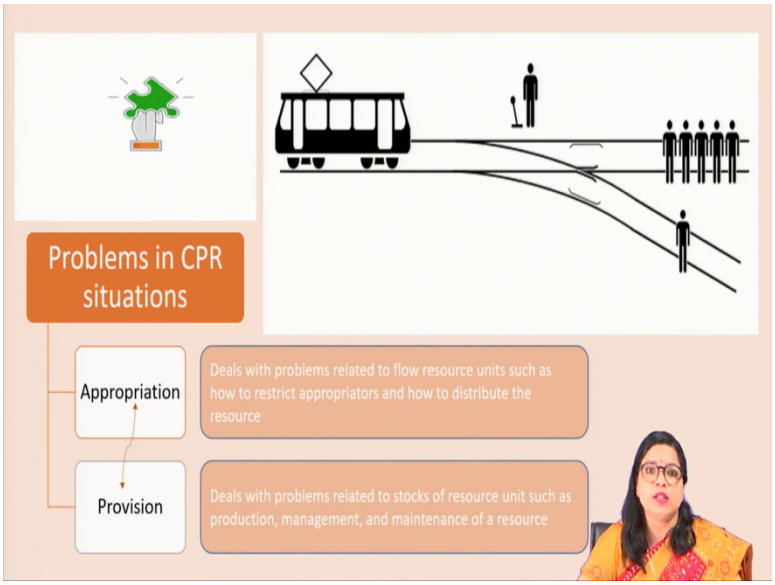

One is appropriation and the other is provision. Appropriation deals with problem related to flow resource units such as how to restrict appropriators and how to distribute the resource. The set of problems that focus on stock of resource units are known as provisions. It has to do with production, management and maintenance of a resource. The two problems are related since the problem of appropriation depends on how efficiently the provision problem has been solved.

Sometimes the resource users face a tragic situation, all over the world due to prioritization of individual rationality over what is good for the group or the group that is using a common pool resource. This kind of situation is known as common pool resource dilemma.

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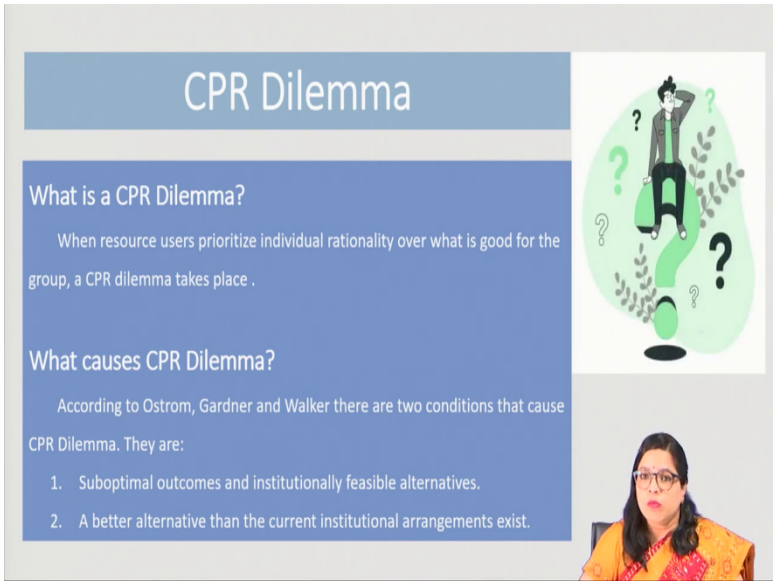

So, what gives rise to such a dilemma? Ostrom, Gardener, and Walker again provide two conditions for such occurrence. Suboptimal outcomes are institutionally feasible alternatives. The first condition of suboptimal outcomes takes place when the appropriator of the resource feels that the rules that they agreed on for the governance of the common pool resources is not bringing optimal results for them.

The 2nd condition happens when they find a better alternative that exists when it comes to the current institutional arrangements which benefit the individual appropriators such as modifying the operational rules that determine the right and the duties of the users and the non-users, where they might include more rights of the users. And if these two conditions do not exist then there is no common pool resource dilemma.

According to Ostrom, Gardener and Walker in order to solve the common pool resource dilemma, we need coordinated strategies.

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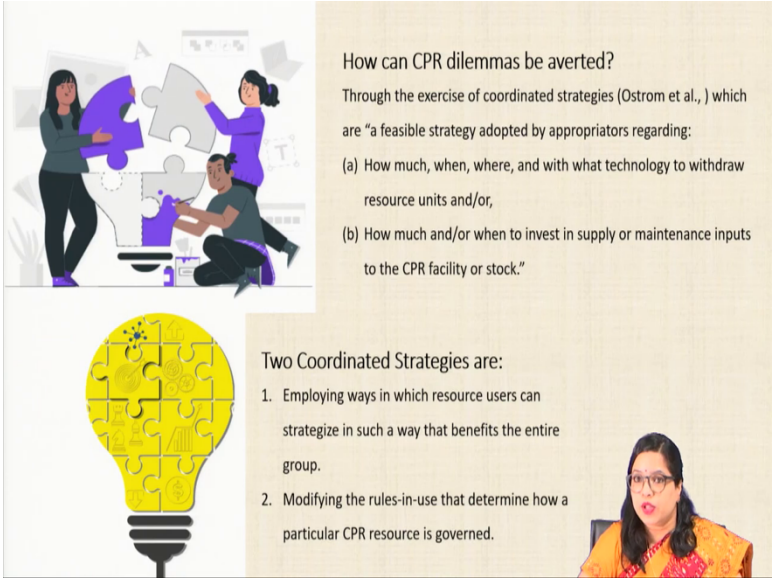

They define the coordinated strategies as a feasible strategy adopted by appropriators regarding, 1. how much, when, where and with what technology to withdraw the resource unit and, or 2. how much and, or when to invest in supply or maintenance inputs the inputs to the common pool resource facility or stock. There can be two such coordinated strategies on field.

The first coordinated strategy involves employing ways in which resource users are strategized in such a way that benefits the entire group. In this way, results are no longer undesirable. For example; all resource users can communicate and decide upon using the same strategy that yields good results for everyone if all of them follow the same strategy of the resource use.

The second coordinated strategy involves modifying the rules-in-use that determine how particular this common pool resources is governed; especially by adding rules to monitor and sanction each other when it comes to the resource users. Coming up with punishments for rule breaking or rule breakers or for the resource use, monitors the activity of the users and helps in upholding the common agreement among all the users for the resource use.

Sometimes both the strategies are used to mitigate the common pool resource dilemmas. Common pool resources are both subtractable and difficult to exclude which means, they have a chance of being over exploited by the multiple users. The proper implementation

of rules can ensure sustainability of these resources; however, such rules are not always adhered to. The reason for this can be found in Mancur Olsen's work.

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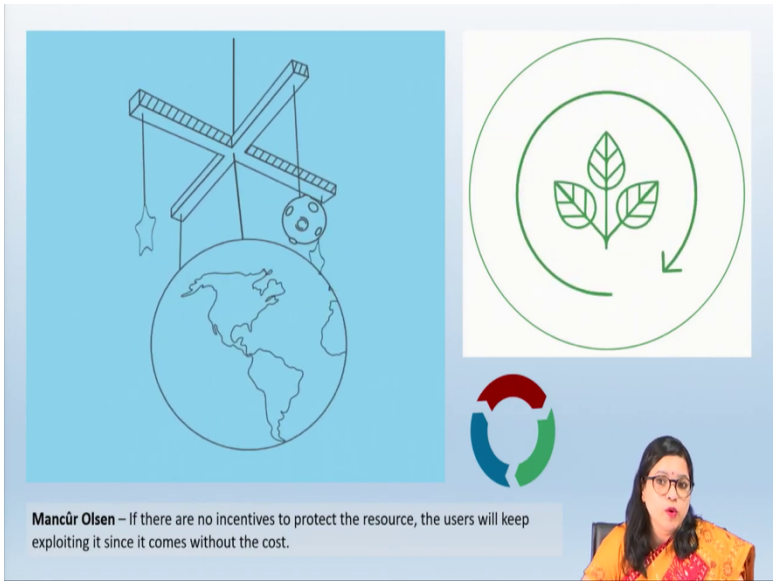

He argued that, even though the sustainability of public goods will be good for everyone. If there are no incentive to protect the resource, the users will keep exploiting it since it comes without a cost. Hence, it is easier to free write for every individual even though it is bad for the entire group. In order to make sure that such management of resources is efficient the group has to solve two problems, at the collective action level.

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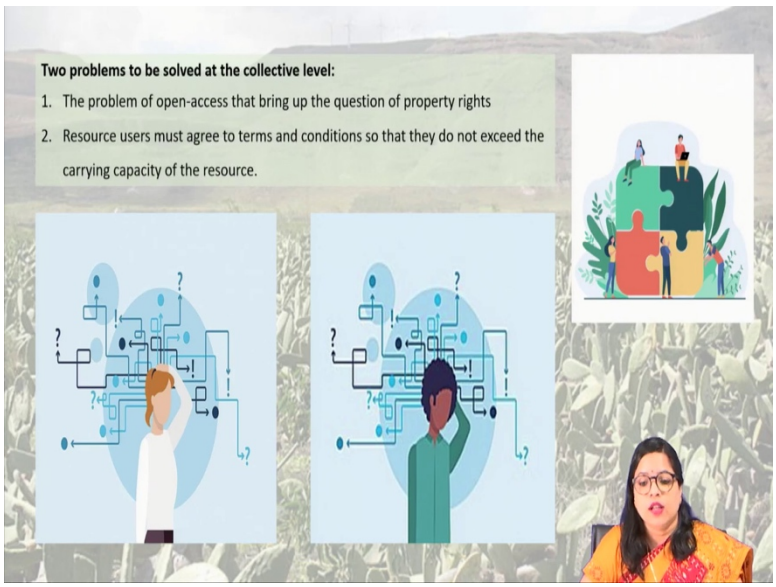

Firstly, open-access to the resources will only result in exploitation of the resource since there is no reason to conserve it. Hence, property rights have to be legally enforced in these scenarios. Secondly, the resource users who have been allowed to access the resources must agree to the terms and conditions so that, they do not exceed the carrying capacity of the resource.

By now, it must be clear to you that the group or the community in charge of the resource has a huge role to play in its sustenance.

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Aruna Agarwal and Clark Gibson have argued that community and its role in resource management has to be examined by concentrating on the multiple interests and actors within communities, on how these actors influence the decision-making power. There are 3 factors that need to be considered in the study of the communities. They are; Multiple interests and actors, local level processes and, Institutional arrangements.

Contrary to the previous studies that focused on homogeneous nature of the communities managing a common resource, new studies including Arun Agarwal and Gibson show that local communities are stratified.

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And within them, individuals have different notions of how a resource should be conserved. The multiple kind of resource users have to be acknowledged for their empowerment. It shows that even inside a community, different preferences exist and change with time. The local communities and the resource users within them decide how the resource will be used, how it will be managed and how it will be conserved, for the future.

They do so, by implementing the pre-determined rules to conserve the resource in question. They also mitigate the conflicts with when it comes to implementation of the rules. This is done in accordance with the existing power structure which however, is susceptible to change over time.

Hence, what is planned in case of conservation efforts do not always pan out in the way it is expected. For this reason, the socio-cultural context of the community has to be considered. Government and non-governmental organizations or interventions often shape the nature of the conservation program.

In some cases, rules that had been implemented go out of use. This happens due to factors such as increase in population, introduction of new technology that creates new markets which when combined gives rise to competition, as a result there is a tendency to break rules and over exploit the resource.

Social and cultural factors are also responsible for breaking the rules in some cases. Let us now, discuss an empirical example from India and then situate this common pool resource governance. According to Kanchan Chopra and Purnamita Das Gupta, community pool resource in India are defined as non-exclusive resource to which rights of use are distributed among a number of owners, estimated to be 70 million hectares in land area of 328 million hectares.

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In today's lecture I will be talking about the sacred forest or the sacred groves of India, which have socio-cultural and religious significance and hence have been traditionally conserved by the people who live in their vicinity, to understand how these common pool resources are managed in our day-to-day affair.

The sacred forest varies greatly in size and have been found to serve important functions by different scholars. Some of them are, contributed contribution towards religious activity for the purposes of burying the dead, as watershed and also environmental services such as control of soil erosion and supply of superior quality of water. In India, there are 1,00,000 to 1,50,000 estimated sacred forest.

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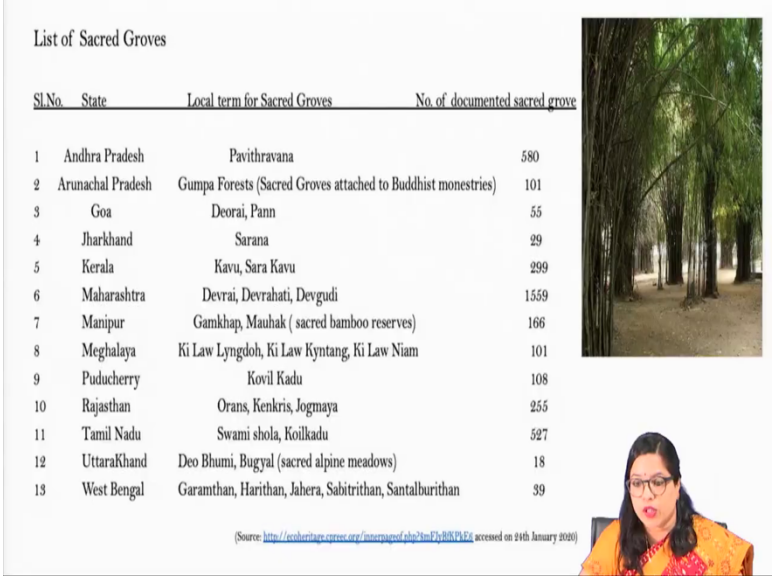

The highest anywhere in the world the one in the Western Ghats has been identified as the biodiversity hotspot, by mayors. This means that even though it has excellent potential in terms of species count, there is unprecedented amount of pressure on the resource base.

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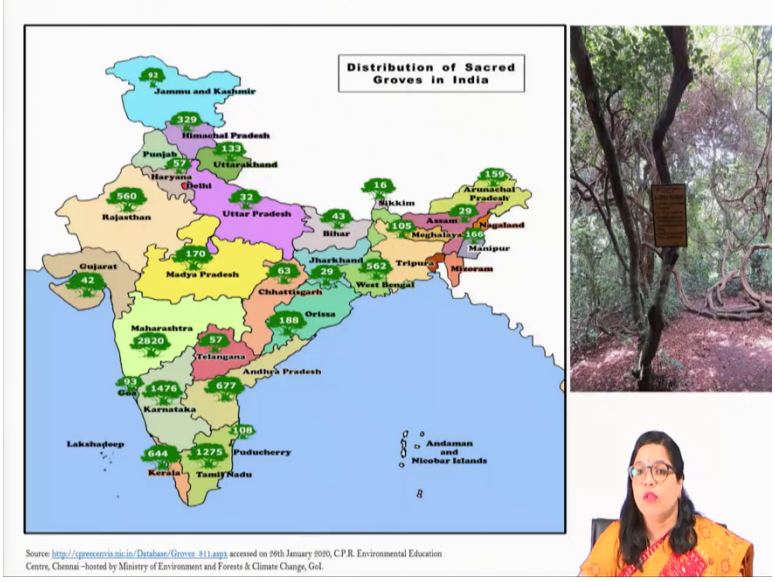

We will now see how sacred forests in India are an example of community based natural resource management. All over the world sacred forests have been protected because of their spiritual value. This attitude is probably most prominent in India, where believes that negative consequences will follow if you attempt to cut down or retrieve resources from

the sacred forest. And this has been enough to protect such resource base for several generations.

Practice which is estimated by scholars to have begun since the age of settled agriculture. The reason for such conservation, arrangements range from environmental to religious ones in this case.

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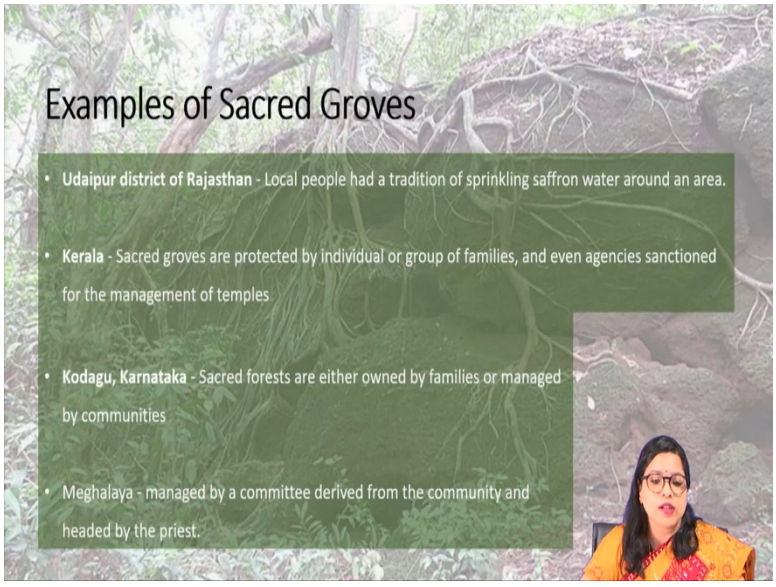

Alison and Bhagwat brought out one incidence in Udaipur district of Rajasthan where the local forest department effort to conserve a small piece of land went in vain. Because, when they were trying to enforce the government criteria's of preserving the forest, the local people were not abiding by it. They were still cutting down the trees and drawing from the forest. But the local people basically believed in a tradition of sprinkling saffron water in the sacred areas.

So, these officials borrowed from that idea and they started sprinkling saffron water around an area to mark it sacred. And, once they did that, the local community started respecting the forest and began to acknowledge the boundaries of the conserved area. So, through this example, we can see how religion and how beliefs play an important role in protecting and conserving certain resources.

In Kerala, sacred groves are protected by individual or group of families. And, even agencies sanctioned for management of temples. In Kodagu district of Karnataka sacred

forests are either owned by families or managed by communities. Similarly, sacred forests in Meghalaya are managed by a committee derived from the community and headed by the priest. Clearly, sacred forest holds great importance to the place where it is located and the people around it.

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So, what makes them so important and why are they conserved? First, the species diversity is quite high in these areas higher than the other forms of protected land in the same area or same region. Second, there is higher concentration of the plant having medicinal values.

In Kodagu the percentage is as high as 30 percent. Third, the diversity of the variety of habitats fall under the area of sacred forest which means they provide protection to even species that fall outside the protected areas. For instance, in Karnataka a nutmeg species is provided shelter by the sacred forest.

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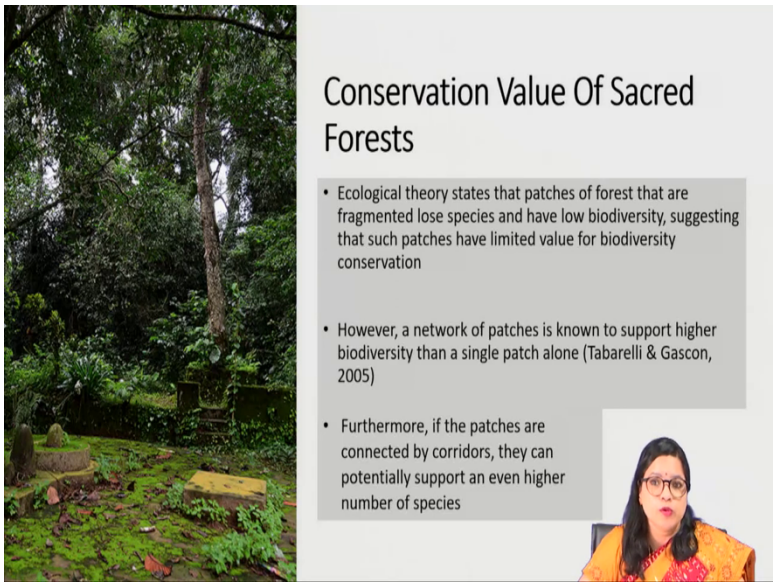

Finally, patches of forest that are jointly or joined by corridors can support greater biodiversity. This can be observed in Kodagu, where there is a network of over 1,200 sacred forest. These sacred forests in turn support coffee plantation and coffee planters return the favor by looking after the forest. I will now discuss the threats to the sacred forest or groves of India which makes it even more essential to protect this resource.

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Apart from the functions that I have discussed or talked about, over the years sacred forest in India have been reducing in size and losing their protection. One of the primary reasons

for this being happening is the interference of government and the formulation of new policies. As a result, the local communities have lost the control over the resources, as well as the ability to look after them.

In addition to this, the demands of the market have put undue pressure on the resources housed in the sacred forest. The export of coffee from Kodagu is one example. The ambiguities regarding the ownership of the sacred forest have given rise to uncertain future for them. At various times in history the responsibility of the sacred forest has gone from forest department to the revenue department and vice versa.

As a result, there has been confusion among the local community members, the real ownership status of the groves. As soon as they started perceiving these forests as government properties, their will to protect them was lost. The change in the cultural trend like, the beliefs and the tradition among the youngsters and even farmers and lumberjacks have changed regarding the sacred nature of the forest.

This has made way for aggressive commercial agriculture. When it comes to religious practices, the tribal rituals have been subsumed by Hinduism. Now, there are temples inside sacred forest and cutting of timber is allowed for religious requirements. Finally, there have been alteration in social structures and constituents along with changes in economic and religious aspects. For example, in Meghalaya tribal cultures that were responsible for protection of sacred groves have been replaced by the Christianity.

Increasing urbanization and encroachment into the forest land, for the purpose of extending the boundaries of the cities has led to the loss of religious and cultural ideas in Kodagu, leading to the destruction of the sacred forest. The migration of local community members to the city for the purpose of acquiring better jobs has left the sacred forest in charge of immigrant population workers who have no special connection with this forest.

Some of the forest patch have also been cleared off to provide accommodation for these immigrants. So, you can see in this case, how sacred plays an important role in the conservation of a resource. The damages or threats to sacred forests that I have discussed are not reversible. However, it is possible to prevent further destruction with the joint efforts of the government and the local community.

Since sacred forests are managed in multiple ways by different stakeholders such as families, communities and the government there are no solution that can alter or cater to all types of arrangements. Alison and Bhagwat have identified some mechanisms to improve the sacred forest governance.

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According to them, the policy of conservation implemented by the government should be such that the local and the traditional managers of sacred forest are in charge. If a generalized protection arrangement is planned for the entire country, chances are that the spiritual values and in term the conservation effort will suffer.

So, here what they suggest is that, we should look into the religious value of the resources and how they matter to the specific community than coming up with one uniform code. External help is necessary for the protection of sacred forest in some cases. An example of this, are the sacred forest of Meghalaya.

In Ghana, the government help was shot by the community members to put a ban on the hunting of sacred monkeys belonging to sacred groves. So, in this case you can see how external help is sometimes required to manage or maintain or conserve these resources. Along with an emphasis on the involvement of the local in the sacred forest management there is a need to bring back the community tradition.

Awareness campaigns can be arranged alongside educational programs to highlight the importance of these forests. While protected areas, can serve the purpose of conservation they are based on legal sanctions. Unlike the informal taboos and customs that surround the conservation of sacred groves. Conservation programs will be successful only when the local community is involved and its value and traditions are considered.

The conservation management or the conservation arrangement around the sacred groves are thus not backed by laws, but by local beliefs and values which make them more acceptable ways of protecting the forest rather than a generalized protection area system implemented by the government by passing the legal system.

The need to protect the sacred groves has to be broadcasted in the international forum to receive funding for conservation. In words of Ormsby and Bhagwat, sacred forests are not just cultural monuments; they are conservation areas that can provide a culturally sensitive model for community based natural resource management.

To sum up the discussion so far, I have told you what common pool resources are, the theories that shed light on how they are managed, the role and the aspect of communities in charge of the management process, the conditions under which people agree to conserve or manage the common pool resource, why local governments fails in certain situation and, finally, how the management of sacred forest in India are an effective model of community based natural resource management.

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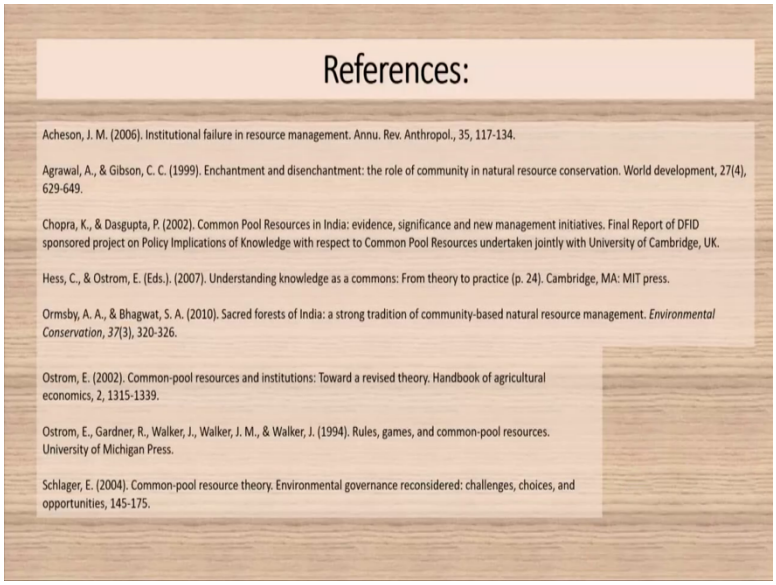

So, in the next lecture, I will be talking about the tragedy of the commons.

Thank you for listening and have a great day ahead.