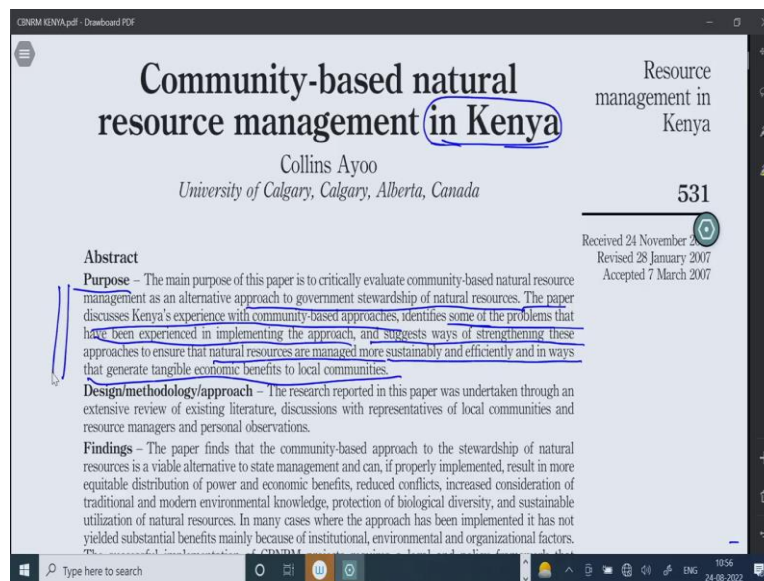


Natural Resources Management (NRM)
Professor Sudip Mitra, PhD
Centre for Disaster Management & Research (CDMR)
Head, School of Agro & Rural Technology (SART)
Discipline - Agriculture Engineering
Indian Institute of Technology Guwahati, Assam, India
Week - 08
Lecture - 48
CBNRM in Kenya

(Refer Slide Time: 00:36)



Welcome to today's lecture. And today we will be discussing a paper which has been written on Community Based Natural Resource Management and a case study that we will discuss in Kenya. Now, why Kenya, that question might come in your mind. I have chosen this particular case study in from Kenya, because you will find a lot of similarity with some of the case studies or cases within our country.

I purposefully have not chosen any case study from our own country, because some time it is also important for us to see that how community based natural resource management is happening outside our country and in developing countries. Now, today, I will also talk about one area particularly located in Kenya and very important from the viewpoint of natural resource management.

In India also, you know that we have, there are a lot of conflicts between wildlife and man, agriculture versus wildlife, crop production versus wildlife, then natural resources versus utilization need for developing activities; there is various other aspects that are also

associated. Now, Community Based Natural Resource Management CBNRM, which we discussed earlier in one of the lectures, we discussed in great detail about the principles, the processes of CBNRM.

So, today this particular case study will provide you an opportunity to understand that how in reality on the ground CBNRM works, and what are the different challenges that you can face and how to address those? So, the purpose of this particular paper is to critically evaluate community based natural resource management as an alternative approach to government stewardship of natural resources.

There are many cases you will find that in our country as well as outside our country, that government takes control of the natural resources, especially forest, you will find. There are various reason that why government actually takes control of these resources, I will come into those aspects in few minutes.

Now, once government, takes control of these particular aspects, then there are certain issues which can appear, like, if government takes control of a forest area, then the community, the traditional community who are staying in and around that particular area, they may not be able to access those natural resources on which their livelihood is based on, that is one.

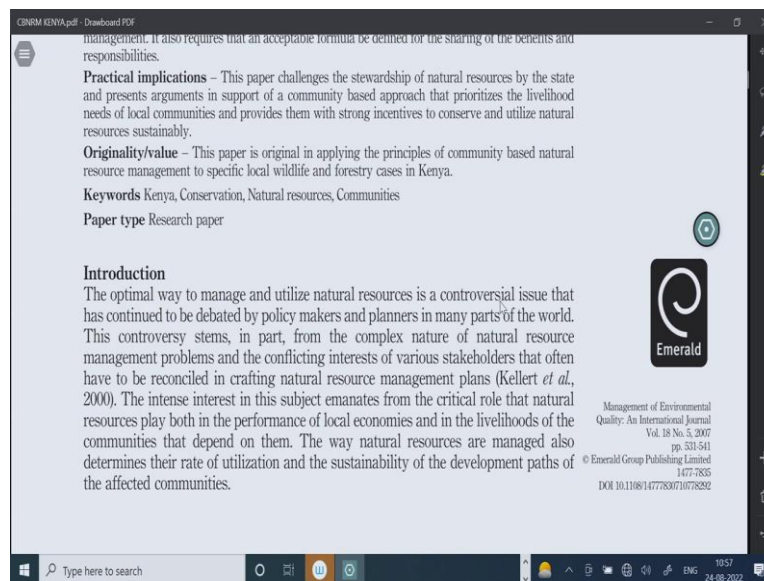
Second, to manage that natural resources within that forest area, if government takes it, say they announce it as a reserve forest, then you can imagine the amount of manpower like policing need to be invested.

Third, there will be always conflict between the communities and the authorities who are taking care of the forest.

So, in a sense, probably government could try to preserve the forest area, but while doing so, there are many other issues which can actually appear. Now this particular paper it discusses Kenya's experience with community-based approaches, it also tries to identify some of the problems that they have experienced while implementing this approach.

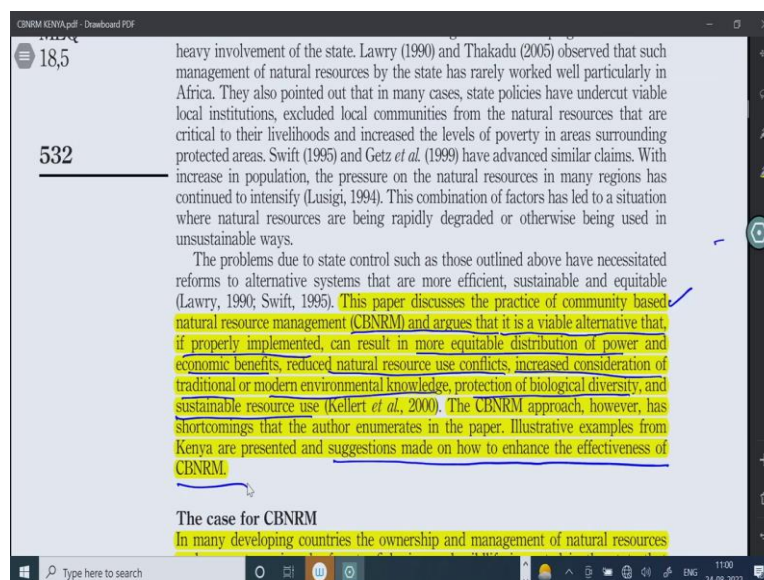
And also, in this paper, it suggests ways for strengthening these approaches to ensure that natural resources are managed more sustainably and efficiently and in ways that generate tangible economic benefit to the local community. So, this is the background of this paper and that is the reason I have thought of discussing this paper with you.

(Refer Slide Time: 05:07)



Now, with that background let us see that how this particular area actually provides opportunities for various kinds of community based natural resource management. The optimal way to manage natural resources is a controversial issue and that has been debated for years together.

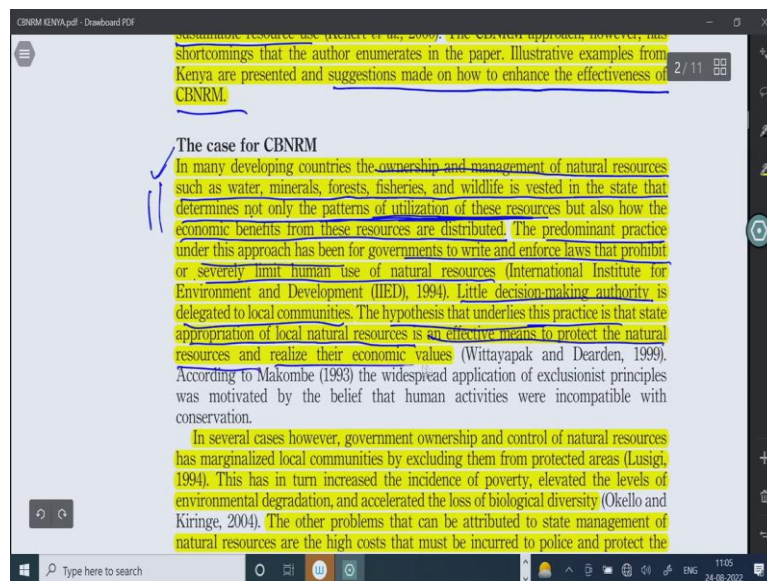
(Refer Slide Time: 05:37)



So, this paper, it discusses the practice of community based natural resource management and argues that it is a viable alternative, which if properly implemented, can result in more equitable distribution of power and economic benefits, reduce natural resource use conflict, increased consideration of traditional or modern environmental knowledge, protection of biological diversity and sustainable resource use.

This CBNRM approach, however, has few shortcomings, and in this paper, the author tries to talk about those shortcomings as well. And various examples he has given from Kenya and he has not stopped only talking about the problems, the shortcomings, but he has also made suggestions, how to enhance the effectiveness of CBNRM in that kind of condition, where you face some kind of challenges.

(Refer Slide Time: 06:46)



Now, let us take the case of CBNRM in a location in Kenya. As I said that, you will find a lot of similarity in many places in our country and especially in northeast India. In northeast India, as that it is a hotspot for biodiversity and we have many forests, which are announced national forests and so on and so forth. So, that means they are taking under the government jurisdiction.

Now, let us see that how in Kenya, they face the issues with natural resource management, when it is free for public and when government decided to take under their jurisdiction, both the aspect will be discussed. Now, in many developing countries, you will find that the ownership and management of natural resources like water, mineral, forest, fishery, wildlife is vested in the state, means with the state government.

They determine not only the patterns of utilization of these resources, how they will be utilized, but also how the economic benefits from these resources are distributed and there is the problem. Please try to understand; hundreds or hundreds of years community are staying in that area, they learn to you know survive along with forest, jungles, animals, birds, all kinds of optimum example of coexistence.

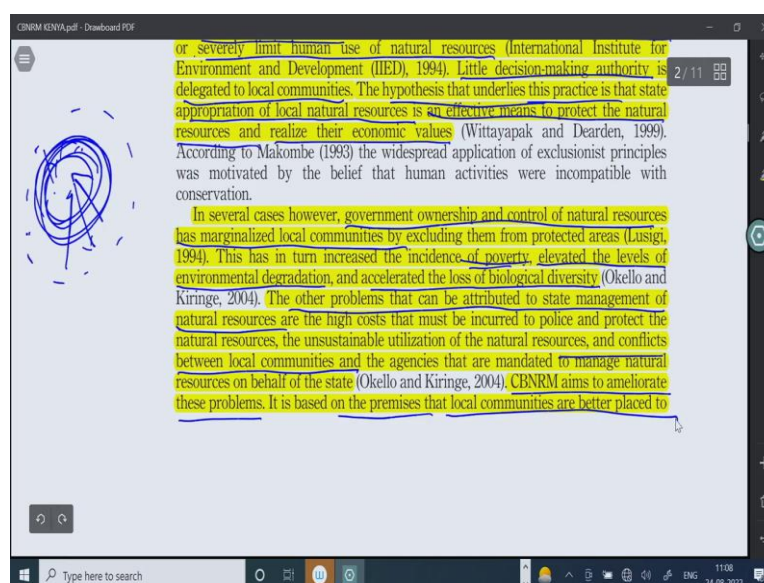
And they learn to survive in that way. Now, suddenly, if that forest on which their livelihood, their survival exists is taken off from them and comes under the control of government with a good intention suppose with the increasing of populations of the local community, the utilization of the resources from the forest area will definitely go up.

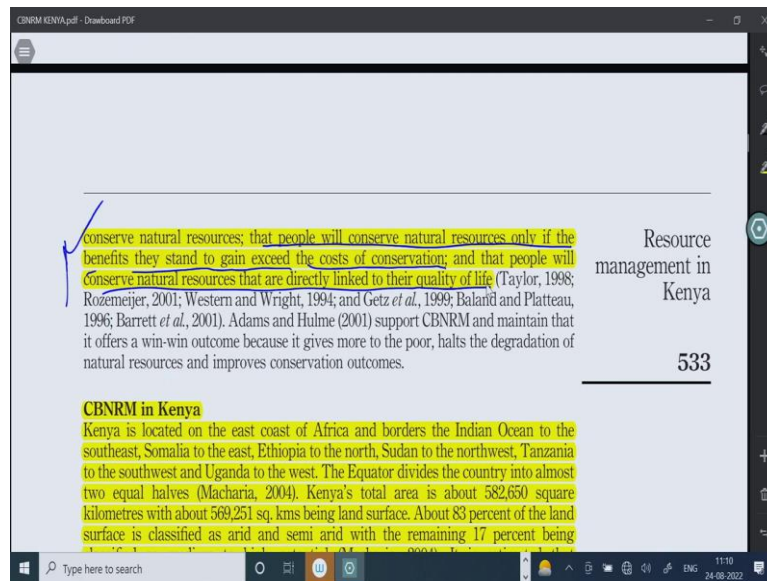
So, government decided, Okay, now, let us take it under our control, we will do policing, we will not allow people to come in and take away timbers and woods and all those things whenever they like. But while doing so, the things that happen, that they decide also the patterns of utilization of the resources. And moreover, the economic benefits from those resources, how it will be distributed is also going to be decided by the government and there lies the problem.

And that is the source of conflict, potential conflict between community, government or the institutions taking care of those natural resources. Now, the predominant practice under this CBNRM approach or under this approach, where government takes care of the resources has been that governments to write and enforce laws and that will prohibit or limit the access to the natural resources by the communities.

And very little decision-making authorities is actually left to the local communities. So, certainly local community will be unhappy. Now, the hypothesis that underlies in this practice of government taking the control of the resources is that, the state appropriation of the local natural resources. They think that is an effective means to protect the natural resources and realize their economic values.

(Refer Slide Time: 10:28)





Now, what happened is that, around the world, if you look at several cases, government ownership and control of natural resources has largely marginalized local communities, by excluding them from the protected areas, that the forest area that you have protected. Now, the communities earlier used to stay surrounding this area, they used to go inside come out whenever they want, their survival was dependent on the natural resources available in forest.

Now, what happened is that that when you reduce the decision power of the community, when you marginalized the local community for accessing the natural resources, which hundreds of years they had been doing, these could in turn can lead to poverty, it could elevate the levels of environment degradation, accelerate the loss of biological diversity, because though they think that they have taken the control, people are not there.

So, then what will happen, people out of need, they will go and cut the trees or take the things from there, but they will not think about regenerating them, because the kind of ownership that they used to have earlier once it comes under protected area, they will not have that. They will feel that they have been uprooted from the system.

The other problems that can be attributed to state management, natural resources are the high cost of maintaining security force, police protecting the natural resources, the unsustainable utilization of natural resources and also to control the conflicts between local community and various agencies. All together it becomes a quite a costly affair, and a lot of dissatisfaction unhappiness conflict also generates.

CBNRM aims to solve this problem, because it is based on the premises that local communities are actually better placed to conserve natural resources. That is what CBNRM

principle is. CBNRM also tells that people will conserve natural resources only if the benefits they stand to gain exceed the cost of conservation.

And this is true for all of us. If you give me a gift, suppose a gift and then you say, or I find after 1 or 2 months, that maintaining that gift, which I liked, I enjoyed is very, very costly affair. So, what I will do, I will stop using that gift, because I will find that the value of the gift which I am getting happiness out of that is not that much in comparison to the cost the expenditure that is being incurred to maintain that particular gift. In such situations, certainly I will not like the gift or even if I like I will not try to use it, I will just leave it some corner.

So, here people also if they see that the natural resources whichever are around them, the value of that natural resources or the benefit that they can extract from the resources is less than the cost of conservation, then they will not go for conservation. People will conserve natural resources that are directly linked to their quality of life, whichever natural resources they feel that is directly related to my life, they will preserve.

Say for water, in any village anywhere across the world, you go you need not to make them aware much they will take care of the water resources very carefully, because it has directly linked with their life. If they do not get water for 2 days, they know that the kind of suffering they will go through. So, I hope that from this example, it is clear that unless until community finds that the benefit of conserving a resource exceeds the cost of conservation, they will not go and this is true for all.

(Refer Slide Time: 14:54)

The screenshot shows a PDF document titled "CBNRM KENYA.pdf". The visible text includes a paragraph about conserving natural resources and a section titled "CBNRM in Kenya". The text in the "CBNRM in Kenya" section describes Kenya's location, area, land use, and climate. The document is displayed in a window with a sidebar on the left and a top bar showing "Kenya 3/11" and "533". The Windows taskbar is visible at the bottom.

CBNRM KENYA.pdf - Download PDF

Conserve natural resources that are directly linked to their quality of life (Raynor, 1990; Rozemeijer, 2001; Western and Wright, 1994; and Getz *et al.*, 1999; Baland and Platteau, 1996; Barrett *et al.*, 2001). Adams and Hulme (2001) support CBNRM and maintain that it offers a win-win outcome because it gives more to the poor, halts the degradation of natural resources and improves conservation outcomes.

CBNRM in Kenya

Kenya is located on the east coast of Africa and borders the Indian Ocean to the southeast, Somalia to the east, Ethiopia to the north, Sudan to the northwest, Tanzania to the southwest and Uganda to the west. The Equator divides the country into almost two equal halves (Macharia, 2004). Kenya's total area is about 582,650 square kilometres with about 569,251 sq. kms being land surface. About 83 percent of the land surface is classified as arid and semi arid with the remaining 17 percent being classified as medium to high potential (Macharia, 2004). It is estimated that approximately 7 percent of the country's land area is arable, 1 percent is under permanent crops, 37 percent is under permanent pastures, and 30 percent is under forests and woodlands. Kenya enjoys a tropical climate. It is hot and humid at the coast, temperate inland and very dry in the north and northeastern parts. From the coast, the altitude increases gradually through the coastal belt and plains, the dry intermediate low belt to the Kenya Highlands with the altitude reaching a maximum of 5,199m at the peak of Mount Kenya in the central part of the country. Kenya's rainfall regime is bimodal with the long rains occurring from April to June and the short rains from October to December. The hottest period is from February to March and the coldest is from July to August.

Kenya is one of the countries in sub-Saharan Africa where CBNRM is being actively

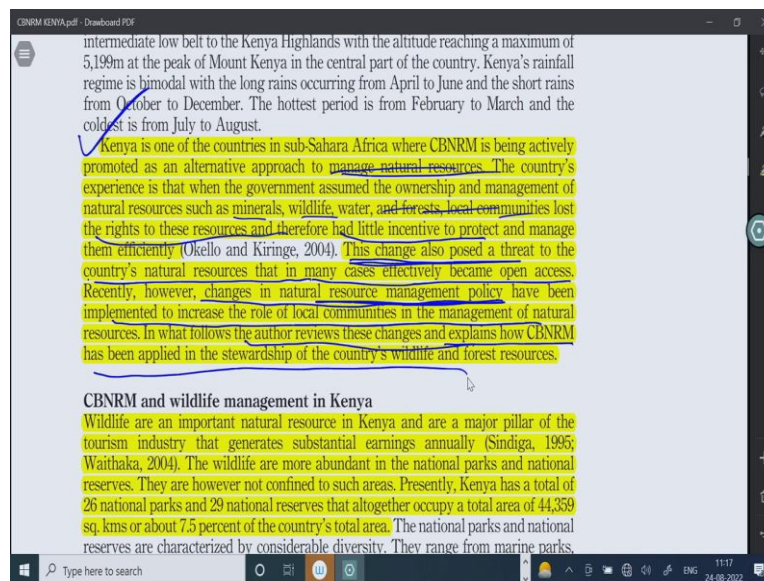
Now, let me discuss a case study that I was telling at the very beginning from Kenya. A very famous place in Kenya we will be talking about and how the situation has changed there one CBNRM introduced. Now, as you know that Kenya is located on the east coast of Africa, which borders the Indian Ocean to the southeast, Somalia, to the east, Ethiopia to the north, Sudan to the northwest, Tanzania to the southwest, Uganda to the west. All of these countries that have talked about has one or other issues related with natural resources.

And there is a lot of tension time to time. The equator divides the country into almost 2 equal half, Kenya. Now, Kenya's total area is about 5,82,650 square kilometers with about 5,69,251 square kilometers being land surface. So, that means, it is totally dominated by land about 83 percent of the land surface is classified as arid or semi-arid, imagine that means dry area, less water.

So, when water is less than you can imagine that crop cultivation agriculture will be poor. So, after the land the 17 percent whichever if laid being classified as medium to high potential, area, forest, for forest and greenery and cultivation. Now, it is estimated that approximately 7 percent of the country's land area is arable. Arable means where you can grow crop. 1 percent is under permanent crop out of that land area, and 37 percent is under permanent pasture and 30 percent is under forest woodland.

So, you can imagine, a major area of the land surface is covered by forest woodlands. The country Kenya enjoys a tropical climate like us, it is hot and humid at the coast temperate inland and very dry in the North and Northeastern part. So, this is the set that we are going to discuss how actually CBNRM can work there.

(Refer Slide Time: 17:32)



So, also Kenya is one of the countries in sub-Sahara Africa where CBNRM is being actively promoted as the alternative approach to natural resource management. The country has experienced that whenever the government assumed the ownership or the management of these natural resources; wildlife, water, minerals, whatever local communities has lost the right to these resources.

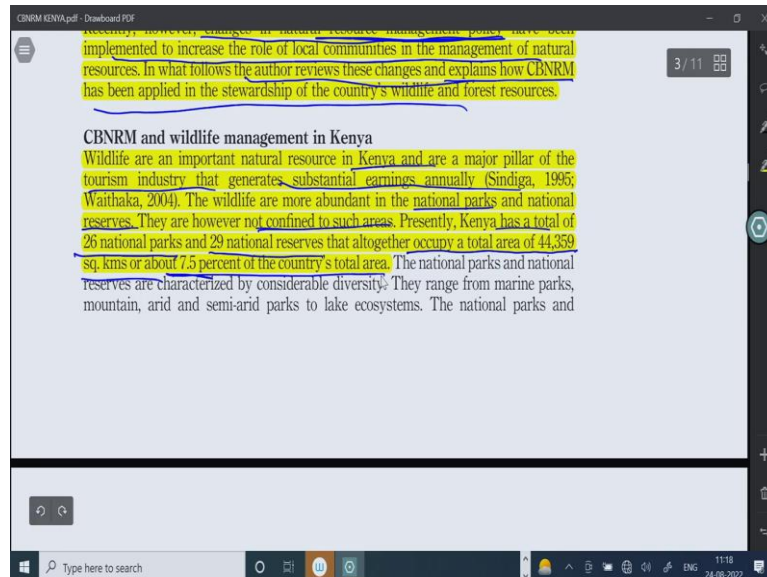
And of course, therefore, very little incentive remains with the local people to protect and manage them efficiently, why they would do, you have protected it benefits are not going to the people directly, you are regulating it, how the benefit will be distributed, then why the community will go for conservation.

Now, this kind of changes means taking the resources into government control, this pose a threat to the country's natural resources in Kenya, that in many cases effectively become open access. So, if you change it, suppose you know take it from people and bring it into under government control, then the access to the resources significantly goes down for the people.

Now, recently what happened that there is a change in natural resource management policy in Kenya. And they have implemented the new changes to increase the role of local community in the management of natural resources. And here in this paper, the author reviews what changes has taken place from government control, and now bringing in certain policy changes, author explains how community based natural resource management has been applied in the control or stewardship of countries wildlife and forest resources.

So, he will now talk about that from that kind of government control natural resource based. When you bring in community based natural resource management concept, how the things changes, let us see.

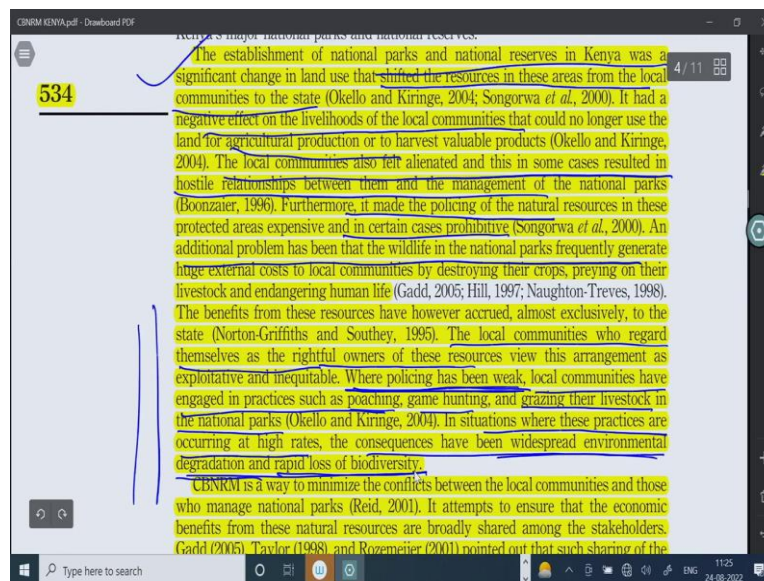
(Refer Slide Time: 19:49)



Now, CBNRM and wildlife management in Kenya, one example. Now, I need not to say that wildlife is how important natural resource for people who stays in a forest area, like in this case, Kenya, wildlife is a kind of a pillar for their tourism industry, which generates substantial amount of revenue. Now, the wildlife is more abundant in the national parks, and national reserves which are under government control.

Now, they are however not confined to such areas, these animals can go out some time of the national parks and can go into the community areas also where people stays people grow maybe some crops. Now, Kenya has a total 26 National Parks, 29 National Reserves, so all together this reserved forest, they occupy around 44,360 square kilometers, which is almost 7.5 percent of the country's total area, significant amount.

(Refer Slide Time: 21:01)



So, these kinds of national parks or national reserves in Kenya were a significant change in land use management, and that shifted the resources in this area from the local people or from the local communities to the state government. So, it has gone into the hands of state government. And naturally, it had a negative effect on the livelihoods of the local community, because they can no longer use the land for agriculture production, or to harvest any kind of valuable product because that land is now protected.

So, the local community also felt that they are alienated, they are completely neglected. And this has some cases resulted in very hostile relationship between them and the management of the national parks means the government who are actually controlling that. Also, polishing of these natural resources in these protected areas has become expensive, government found it very difficult to regulate.

And once you have a system of this kind of protective kind of system, then definitely you will stop or reduce the access of the communities into those protected areas. Now, an additional problem has been that the wildlife. Now, this wildlife as I said just a minute back that they are within the protected area, but you cannot control them. They might go outside the forest and probably in agricultural land of the people the community.

Now, these wild animals will go there and destroy their crops. Sometimes they may physically harm the people community living exactly outside on the boundary of the protected forest. Now, that caused the man and wildlife conflict, which you might have heard,

which is a very sensitive issue and almost across the country, wherever you have forest area and people living together is issue is there.

Now, the benefits from these resources which are there within the protected forest area have been already under the custody of state government, because they are the now the regulator. Now, local community who used to earlier be rightful owners of these resources, the resources which are within the forest, they feel that was their resources, they use to own and they also took care reserve that resources.

Because see, if you have in your home some valuable material, certainly you will try to protect it, if you have a kind of ownership. But if something is lying in others house, you will not bother that much even if that is a valuable thing. Now, that kind of ownership is lost when government is taken into their control. So, the local communities themselves felt that they have been cheated, they have been neglected.

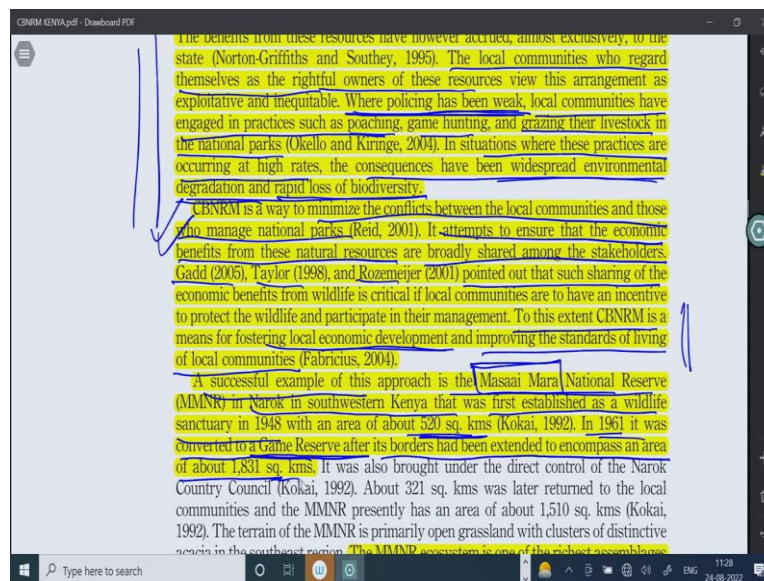
So, a kind of a dissatisfaction and unhappiness started growing. Whenever there is some gap or loopholes in policing local communities will engage in poaching. See, you have heard about poaching, single horn rhino in Assam, where I am actually staying, IIT Guwahati is located here. It is a very, very important and sensitive issue. But we need to understand and this case study actually allows you to understand and think yourself that how these things started.

Wherever there will be little bit of loopholes or weakness in policing, definitely local community will try to enter that forest area and take out the resources, whichever they feel valuable for them. And there starts poaching, game hunting, grazing their livestock inside the national parks. So, in this kind of situation where this kind of practices is occurring in very high rate, certainly the consequences will be very widespread environmental degradation, rapid loss of biodiversity.

Now, that is the sad part, the community the people who before the system used to feel those resources belong to them, they used to take care, but once it has been taken out of them, then they started exploiting it.

Whenever they will get the opportunity to enter, they will just try to take as much as possible, they will not take like earlier they used to take it only that much what they used to need. But now it will be like take as much as you can. And that will lead also, environmental degradation and loss of biodiversity.

(Refer Slide Time: 25:59)



Now, CBNRM is a way which can help to address this kind of situation, and also to minimize the conflicts between local communities and those authorities who manage this kind of protected parks or forest area. CBNRM also attempts to ensure that economic benefits from the natural resources are broadly shared among the various stakeholders.

Gadd and Taylor and Rozemeijer, they have pointed out in their research, that such sharing of these kinds of economic benefits from wildlife is very critical, if local communities are to have an incentive to protect the wildlife and participate in their management. If government wants that local people should take care of the resources, whether it is wildlife or any other natural resources, they have to ensure that the economic benefits from these resources are also equitably shared with the community.

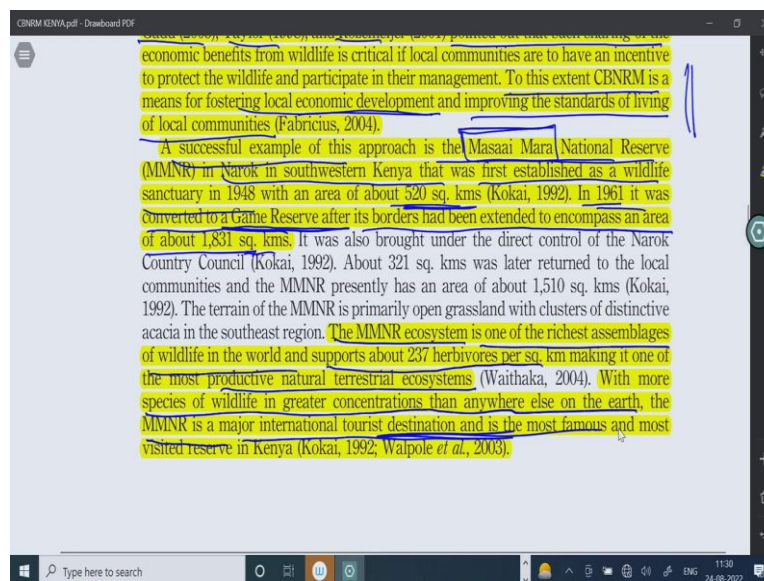
Only expecting them to take care of the resources will not fetch them any kind of solution. So, to this extent, community based natural resource management is a means for generating local economic development, improving standards of living of local communities, the moment it happens automatically people will be sensitive and they will also join hand to conserve or preserve the natural resources.

So, a successful example of this approach is the Maasai Mara National Reserve. Many of you might have heard about this. Many Bollywood, Hollywood movies have been taken place there. People go for shooting, people go for also tourism. So, Maasai Mara National Reserve forest is an successful example of CBNRM. And this is located in Narok in southwestern

Kenya, which was first established as a wildlife sanctuary in 1948, with an area of about 520 square kilometer.

After almost 20 Year 1961, it was converted to a game reserve, after his borders had been extended to encompass an area about 1800 square kilometer. So, you see that today Masai Mara is a place that people around the world want to go. And you will see that that how CBNRM approach has been implemented there successfully.

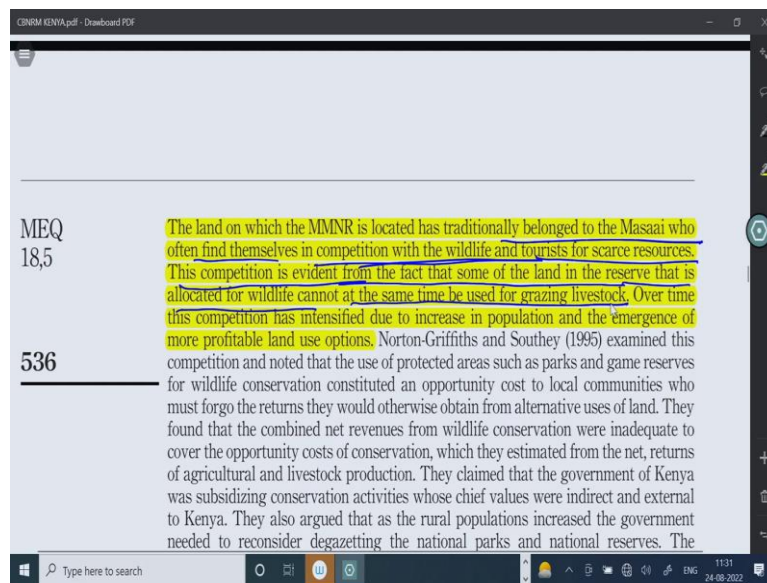
(Refer Slide Time: 28:44)



This Masai Mara National Reserve ecosystem today is one of the richest assemblages of wildlife in the world. This also supports about 237 herbivores per square kilometer and that makes it one of the most productive natural terrestrial ecosystems with more species and wildlife in greater concentration than anywhere else on the earth. That is why I today wanted to share this paper with you the case study.

Masai Mara is a burning example in front of our eyes, that if community based natural resource management implemented in an appropriate manner, there is a win-win solution. People are happy, government also happy, everything goes smoothly, animals, wild animals are happy. So, Flora Fauna, everything is in place. So, the Masai Mara National Reserve is a major international tourist destination today, as I said, one of the famous and most visited places in Kenya.

(Refer Slide Time: 29:52)

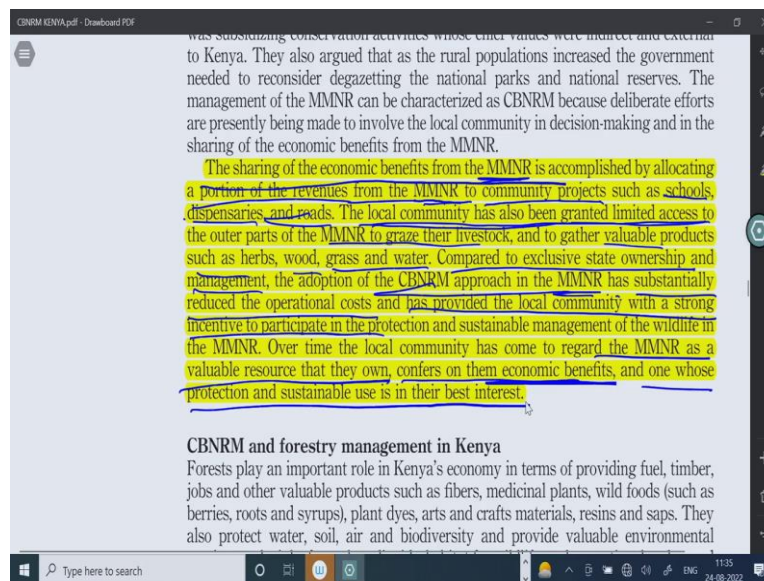


So, friends from this particular case study today what we have learned is that any resources which are open there, and people and government in a participatory manner, which is the concept of CBNRM; it takes care of the system, you will find that everything will be moving as per the expectation.

The land where this Masai Mara National Reserve is located, is traditionally belong to the Maasai community, who actually used to find themselves most of the time in competition with the wildlife and tourists for scarce resources. Means if wildlife comes if they eat something, then these people community Maasai community may not get food for them. So, imagine the vulnerability in the system.

But this competition is evident from the fact that some of the land in Masai Mara National Reserve that was allocated to wildlife cannot be at the same time be used for grazing livestock. Over the time, this competition between the Maasai community and Wildlife has intensified due to increase in population in Maasai community and also the emergence of more profitable land use options like you grow maybe some commercial crop or you build a factory something like that. So, that has generated a new kind of issues even in that particular area.

(Refer Slide Time: 31:24)



But if the sharing of economic benefits from this particular case that I mentioned Masai Mara National Reserve is actually accomplished by allocating a portion of the revenues from this MMNR, means Masai Mara National Reserve to community project; means whatever benefit that you are getting, even if it is suppose under government control, some of that benefit if is allocated for the development of the community, like build a school dispensaries or you build a road, then the local community also will find that they are part of the system.

You can also give a little bit of access to the local community to the various part of this particular national region, allow them to graze their animals in some designated places, and also allow them to gather valuable products such as herbs, wood, grass and water with some little bit of regulation and restriction, but do not stop them totally. So, compared to exclusive state ownership and management, the adoption of CBNRM approach where communities also partner in this area Masai Mara area has substantially reduced the operational cost.

And it has been seen that this has provided the local community with a strong incentive to participate in the protection and sustainable management of wildlife in that area. So, people felt themselves that they are also part of this Masai Mara National Reserve, they are not aliens. Over time, what happened is that the local community has come to regard or respect Masai Mara National Reserve as a valuable resource that they own and confers on them the economic benefits and one whose protection and sustainable use is in their best interest.

So, these kind of feeling when gets generated, a smart government system will go for CBNRM will take community and then you will see that, they will also help you in restoring

the forest and preserving wildlife, and at the same time, they are also happy because you are allowing them a little bit of access to the resources only that much which is required for them. And if they get a feeling of ownership, they will not exploit the resources, because that is what they had been doing centuries, centuries long back.

So, this is the concept. Essentially if you see that we are going back where actually it used to be with a little bit of regulation, a little bit of restrictions in certain time and certain place. Essentially, the philosophy is that you should carry community with you to manage natural resources. Otherwise, if you eliminate them, then certainly they will try to exploit that whenever they will need, and of course, there will be enormous amount of conflict generated from that particular event.