Remote Sensing and GIS for Rural Development
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Lecture Number- 56
RS and GIS application for Rural Development: Monitoring and Evaluation

Hello everyone. Welcome to the NPTEL course on Remote Sensing and GIS for Rural Development. This is Week 12 Lecture 01. I welcome you all to the last week for the NPTEL lecture. I have enjoyed the process of teaching this concept throughout these 11 Weeks and now we are at the applications and summary side of Remote Sensing and GIS for Rural Development.

There has been a lot of engagements on the forum which I highly appreciate. A lot of notes has been exchanged between the IITB team and the participants and moreover happy to see that a lot of students found applications to these in real life scenarios instead of just keeping these outputs as fancy images on papers and articles. It is welcoming to see that a lot of people relate this to the current scenarios in rural developments and the issues.

With this note let us get into week 12 of the lecture and what will happen in this week is we will be discussing about the applications of this software where to use it, how to use it, etcetera and we will also be looking at some real case studies why because we want to show that these case studies can happen if you use remote sensing in a way that you have always used data analysis like observation data.

So, let us again start looks like the screen is off I am going to share my screen again so that we can quickly look into the this week lecture on how to use Remote Sensing Data and GIS for Rural Development.

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Let us move on to the application side. So, Remote Sensing for Rural Development and applications included in Week 11 what we came across is we looked at lot of open source data. We created lot of data that can be mapped and available for the public, we found out beautiful resource available online for free of cost open source which can aid us in mapping, schools, healthcare and roads.

Please note that when this course was designed, there was lot of emphasis also to be put on the rural infrastructures. This is because you may find links to do LULC, water, crop identification in multiple lectures and videos, but very less talk about schools, healthcare and roads in rural regions. I have explained clearly why and how the need is and showed you the tools that can used to estimate the length of the road.

The width of the road and more importantly to document the location of these structures which are absent in the real life scenario. We also looked at open streets maps for adding layers, checking layers and applications. These are needed because we wanted to showcase if there is a lot of need for open street maps and how to input mode. So, if I had done the same study.

The same example for London or New York or other big cities or even rural regions in the US you will find lot of data coming up in fact lot of data coming up. So, it is because the capacity is better in the US to use these mobile applications and OSM software whereas here there is a need for capacity development. In this course as you guys as students who are

learning these will have a better niche of using this because now we have hands on experience.

You know how to show the data, you know how to search for the data in the quick query and you also know how to plot it for applications. So, now in Week 12 which is the final week of this lecture series. We will be looking at government data basis because we are going to focus on applications. It is very, very important to have rural development infrastructures however monitoring and evaluations also needed.

For example there is lot of monitoring and evaluation in big, big programs however the data is currently very less for it. If someone ask me quickly what is the benefits of the middle scheme meal, the mid-day meals for schools kids. It was very hard to justify where the scheme introduced, but then slowly we have the data to show that many students have come to school in rural regions and they were helping us because the body mass is different.

They had access to eggs which is high in protein and also they were able to devote time for studies because otherwise they would be earning or working in the field for growing crops for their food. So, now the food is put on the plate so the 2 hours, 3 hours they worked for that specific food they can put in school then they can go back and work in the field for their family that is different.

But for each person they also work for the food and stuff and healthy food like it is not just rice and dal you do have subzi which is vegetables, curry, rice and sambar and stuff. So, everything is given in most of the regions as listed and we visit a lot of villages through this lecture series and in my current position we have to visit lot of villages and it is happy to see that the scheme is running well in many, many regions.

So, it is more positive and the benefits are there, but the same can be applied to other schemes rural schemes like check dam scheme, MGNREGA scheme, IWMP scheme where are they working, how are they working we need to see and with less data on the application side we are going to see how we can use already remote sensing data which has been collected by itself through satellite, how can we use it through address issues and concerns.

So, with this we will be looking at government data basis in MGNREGA, IWMP as a start to look at where the structures the government is putting up and for how long and then I will give you some snippets of how to go back to the GIS and remote sensing dataset and

download these datasets for application. This is going to be just an intro because I have already taught you how to download the data and all where you will be connecting the data with a problem statement in this week and then making a solution.

We will also look at case studies for applications of remote sensing, water quality and quantity both we will see in one lecture and then LULC mapping, different mapping schemes that are available and the new indicators and dashboards that are coming up due to remote sensing and GIS applications. Please note that most of this will be from my own group because I know the limitations and challenges which I will be happy to disclose because all these studies are using proxy data which is remote sensing data.

So, there is a lot of concerns for lot of people on the limitations and challenges. So, I will be explaining those in detail and then we will wrap up this week's lecture at the entire NPTEL course with the summary, small summary.

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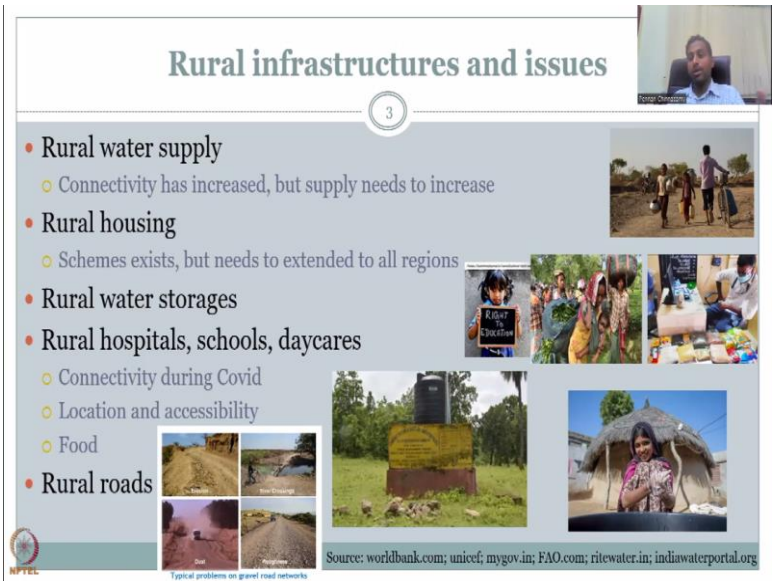

So, let us get in we discussed about the rural infrastructure issues, the water supply we had looked at connectivity has increased like Jal Jeevan Mission that tap connection has increased, but is the source enough to provide a water. How do you get a remote sensing data for that. So, if you see for rural drinking water supply it is not possible the only thing you can map is the source of the water let us say you are taking Lake Erie.

And then if the area is diminishing and there is no water in summer technically there is no water for supply. So, this is how you should be thinking of using remote sensing data for

indicators that you cannot directly measure. Like for example there is a school children walking to fetch water. This is a very powerful image where a boy is going to school whereas the girl is going to fetch water, they should have equal rights for education.

They should have equal right for a quality of life, but this is the scenario. So, we need to support our girl children, we need to make sure that they stop being used because of these issues. We need to support them with better access to water so that if at all they are forced to take water at least they can quickly come back to school, changing the mindset is going to be very, very difficult.

But at least we could change the time that requires for them to fetch water. As I said when I was a kid I had to fetch water when I was in Chennai 4 o'clock, 3 o'clock in some summer times when the city was dry. The supply would come at 4 o'clock in the morning, we have to wakeup run to the street, take water come back and sleep and go to school even that was difficult, but think about half a day is gone for fetching water.

So, it is going to be difficult for us to go into the villages and change their mindset of why are you doing this to women and girl children. The best way is first to get them quick access of water and that will improve their access to education. It is all indirectly connected, but very, very in connected, but indirectly. If you say let her go to school we will give you water they will not bring it up to notice because drinking water supply to everyone through tank this is not going to happen.

So, the Jal Jeevan Mission has a very, very good impact on women education because even though it is not on an education ministry. If the water access is there then the girl children can go to school. So, then we have rural housing the scheme exist, but that needs to extent to all regions this is the concern that we found and how do we map it? We can definitely map it through remote sensing images.

You can take an image of an area which has been declared as rural housing region and then go back and forth in time. So, if you know the scheme started in 2010 you can take images from 2005 in a particular village let us say my own village and we will see how the houses have come up and if we know that these houses have been built using the rural housing scheme then it adds benefits it is a monitoring and evaluation rule.

So, initially we were founding how urban, rural promotions happening between rural and urban, but now we can also use the satellite data for identifying these locations where the housings have come up and the rural water storages as I said if you have a lake and a pond if the water is drying up you can definitely capture it through the satellites. The volume may differ because maybe it has sanitation, maybe it has reduced storage due to encroachment.

But at least you know the perimeter if the water levels have changed. The other rural infrastructure include hospitals, schools and daycares. We did find these data in OSM which is a very rich database and constantly increasing in special and important resolution. The connectivity during COVID was less, the networks, the cell towers etcetera I have also showed that the cell networks have their own coverage map which is download Georeference.

And we will put it on your housing maps to see if the houses are away from the internet or along the internet cycle then we also have the rural locations and accessibility to schools and then food ration shops etcetera. We did search for ration shops we did not get it. So, mainly some government agency can share that data for you to map or you can go to particular district and start mapping.

College students as a project can map all the ration shops in GIS platform or Google Maps that you use for travel can also find these ration shops. Rural roads was bit concern as I said there is software that can automatically detect roads, but it did not detect the roads that are connected to the field. So, there are lot of issues just in the last week we did mention that the distance from the produce to the highway can be highly reduced if we use these roads to a better extent.

So, in this week what we will do is we will revisit some of these things that we discussed in early weeks and now addressing with what data we have connected over the 11 weeks that can help us this. So, for the connectivity as I said we could use the recent, recent Landsat 8-9 and Sentinel 2 images ranging from 10 meter to 30 meter resolution to map the water bodies both this one the rural water supply and the rural water storages.

If you map the supply and if you say this is the supply for the scheme the Jal Jeevan Mission or the rural water drinking schemes and you know that the water is diminishing in summer and totally gone then you can say that the mission has to have other resources for water otherwise it will crumble. So, this is how you could do monitoring and evaluation in a very direct way by using indirect data.

So, the satellite data can give a proxy of the volumes that can be expected from the villages then the housing scheme as I said you can use both Sentinel Landsat 8-9 to map an area and ensure how the housings have developed. We will see some of these housing in the due course of time. There is a lot of Pradhan Mantri schemes that can have the max made for these areas.

And we can see how many houses have been build because the budget has been given let us say they give you 10 lakhs for a village for 10 houses. They should have a data on before and after so that they know the houses have been build. If you look at many claims of this toilet schemes where they said toilets could not be build. However, the corruption on the ground could say that some people say they build the toilets, but they did not build the toilets.

These kind of concerns were raised by people. It could be raised by multiple parties and people, but it can be defended or supported using satellite area that is all I want to say that if you know that a particular area was cleared for a community toilet and 10 latrines were purchased in the scheme. You can definitely do it. So, the government can now hold the contractors who are doing these corruptions to make sure that they are doing it well same with the road quality.

Lot of people are saying road quality is bad, road does not exist after monsoon rain. So, now you have satellite images that can prove it. So, if you know that cars are going on the roads and heavy vehicles are going and the road is good, but if you know that it is all broken and only cycles are going in around, people are quickly using another way that is an indicator of the failure of the road. So, the government can use.

So, you people, you students has capacity for the government can aid in evaluating and monitoring. So, government is pressured to have schemes to work, but down on the ground level, lot of people, lot of externality will make it not work. So, the government can now use these remote sensing images through people students who have build capacity on GIS to address these issues.

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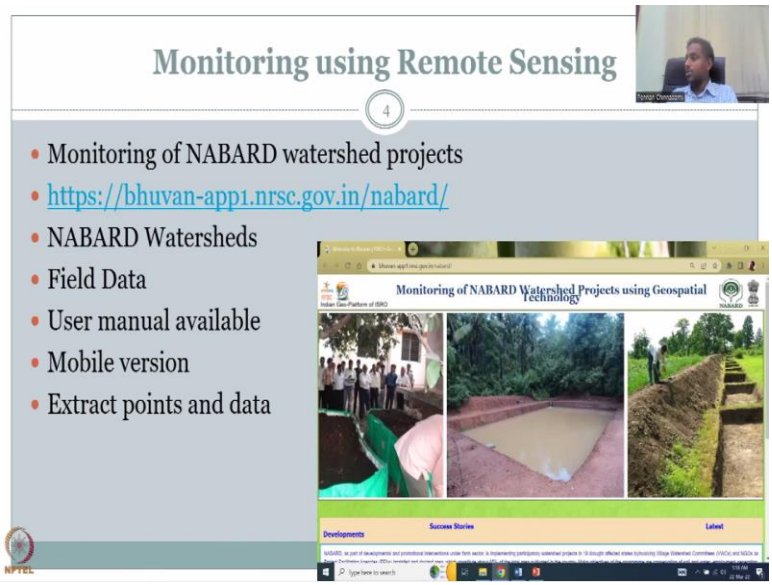

With this, I will start with one very good website that NABARD has created with the support of ISRO and it is mapping of NABARD infrastructure. So, NABARD is the rural bank which is supporting all the infrastructure planning and management activities in rural regions. So, if you click this we will be opening in a new page I will share that page with you to show how the website can be used.

But before that let me just quickly go through the bullet points so that we will use it. So, NABARD website in the Bhuvan has a NABARD watersheds and a field data links. The NABARD watersheds is the watershed management programs under NABARD schemes. You have multiple NABARD watershed programs and we can click on each to see how it is working and where it is located.

Most importantly the location, the budgets are going to come up. There is no evaluation of it even though it says monitoring it is just monitor the location, but not the benefits. So, we are going to show you how to monitor the benefits in the next lecture, but first let us see this data how you could pull out and then use it land use, land cover maps and other indictors in remote sensing and GIS database for your studies.

So, then user manuals available for looking at these locations and studying it how to use this website. Please go through the user manual and then you have mobile version or the phone you can actually collect data, look at these locations when you are on the field, you can extra points and data from these field work which is very important that we will be showcasing now.

So, let me share the webpage. So, when you open this the link will come like this, but before that I would also like to show you the way to search it because sometimes the link maybe updated as I always share NABARD Bhuvan just type NABARD and Bhuvan you will get it. The first link would be okay NABARD for a developmental Bhuvan ISRO's gateway to the earth.

So, just let us click the ISRO's NRSC gateway to the earth and then this picture comes up. So, I am going to use the link that we have chosen here it is the same thing, but you will have different colours depending on what I selected earlier.

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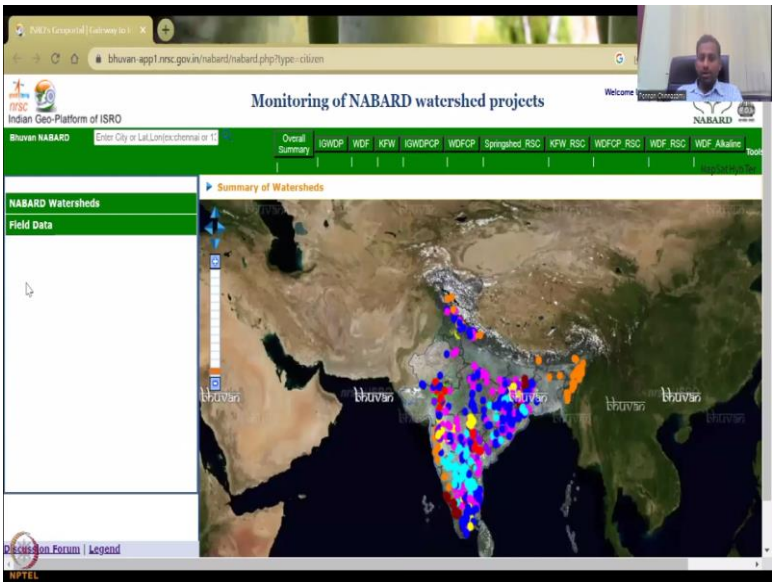

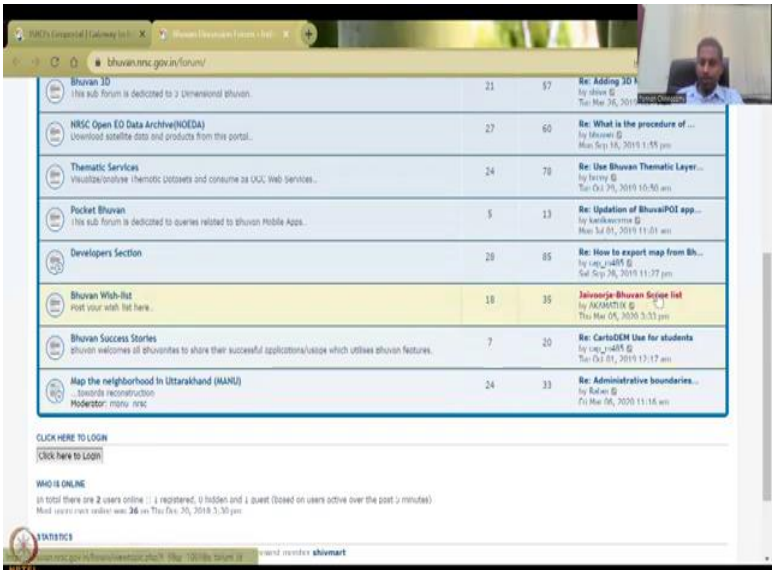
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Bhuvan 3D
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21
57
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Download satellite data and products from this portal..
27
60
Re: What is the procedure of ...
Thematic Services
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24
78
Re: Use Bhuvan Thematic Layer...
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5
13
Re: Updation of BhuvaiPOI app...
Developers Section
28
85
Re: How to export map from Bh...
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18
35
Jaivaarja-Bhuvan Scope list
Bhuvan Success Stories
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7
20
Re: CartoDEM Use for students
Map the neighborhood In Uttarakhand (MANU)
...towards reconstruction
Moderator: manu nrsc
24
33
Re: Administrative boundaries...
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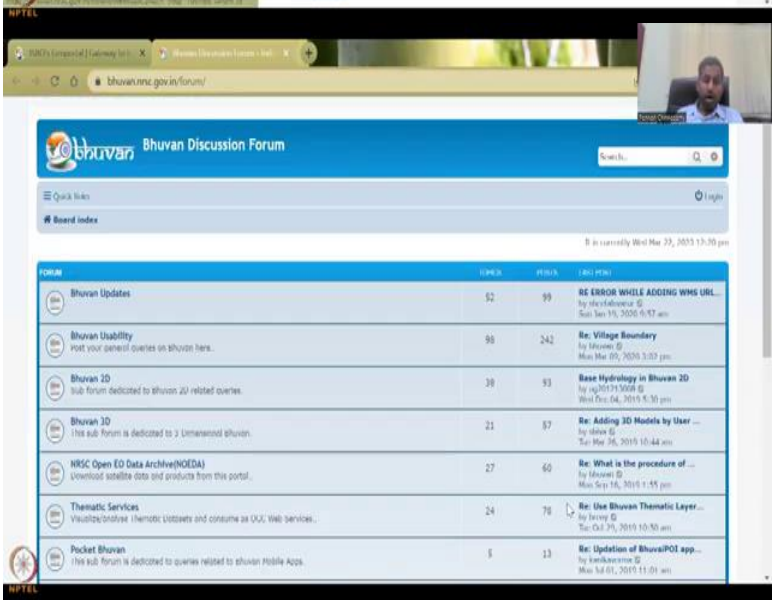
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98
242
Re: Village Boundary
Bhuvan 2D
Sub forum dedicated to Bhuvan 2D related queries.
38
93
Base Hydrology in Bhuvan 2D
Bhuvan 3D
This sub forum is dedicated to 3 Dimensional Bhuvan.
21
87
Re: Adding 3D Models by User ...
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Re: Updation of BhuvaiPOI app...
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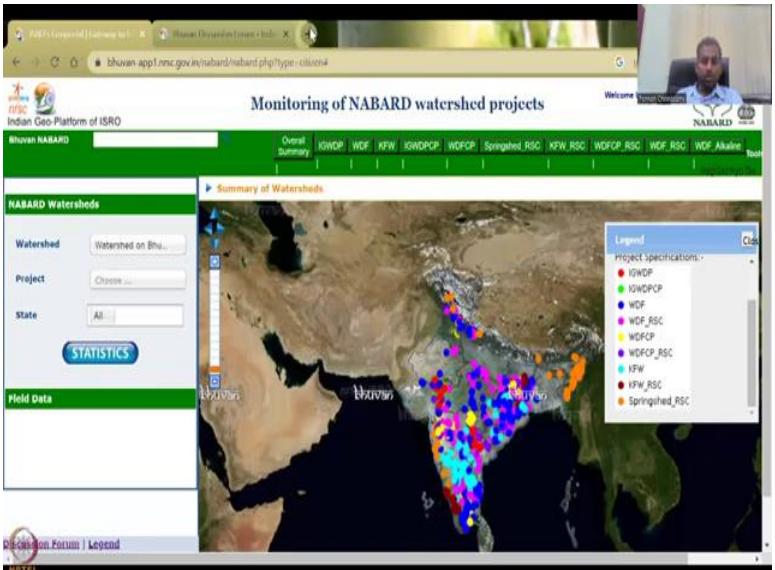
Monitoring of NABARD watershed projects
Indian Geo-Platform of ISRO
Bhuvan NABARD
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
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NABARD Watersheds
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Summary of Watersheds
Legend
Project Specifications :-
IGWDP
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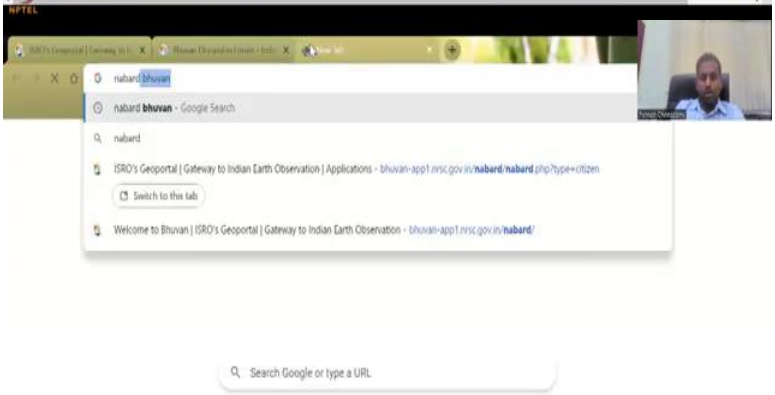
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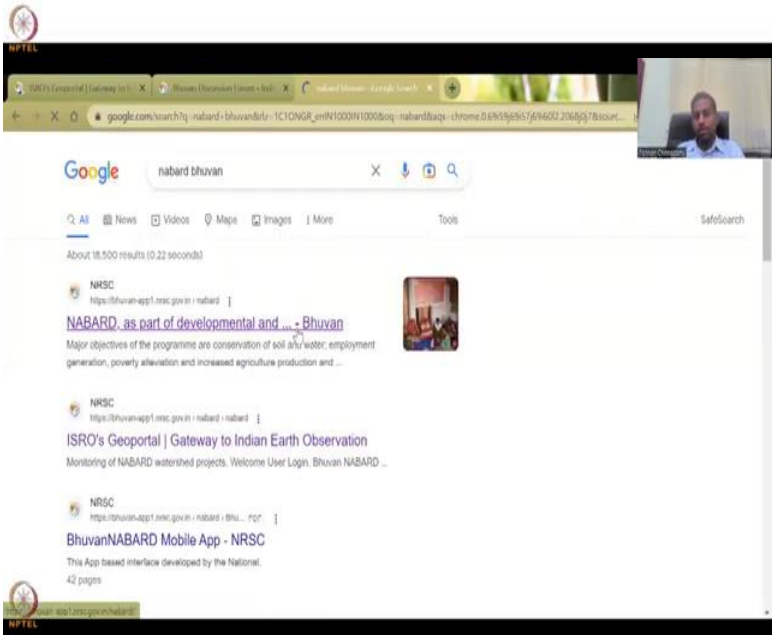
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Monitoring of NABARD Watershed Projects using Geospatial Technology
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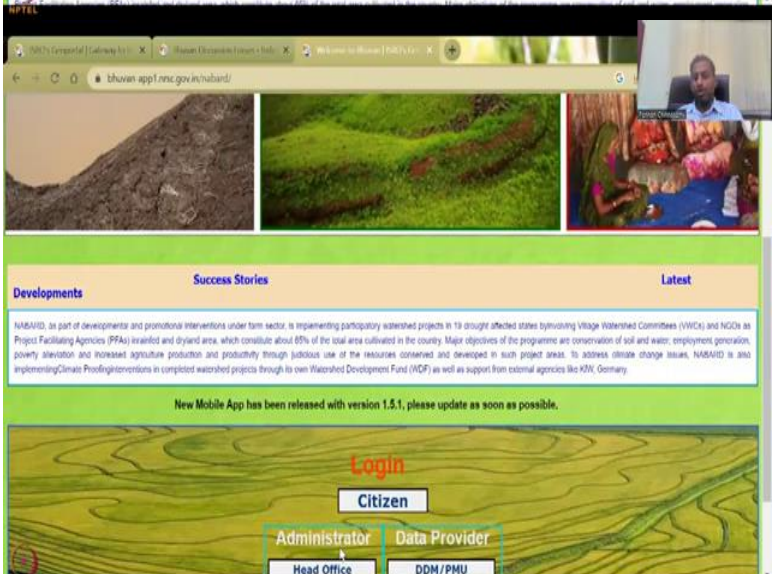
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NABARD, as part of developmental and promotional interventions under farm sector, is implementing participatory watershed projects in 19 drought affected states byinvolving Village Watershed Committees (VWCs) and NGOs as Project Facilitating Agencies (PFAs) inrainfed and dryland area, which constitute about 65% of the total area cultivated in the country. Major objectives of the programme are conservation of soil and water, employment generation, poverty alleviation and increased agriculture production and productivity through judicious use of the resources conserved and developed in such project areas. To address climate change issues, NABARD is also implementingClimate Proofinginterventions in completed watershed projects through its own Watershed Development Fund (WDF) as well as support from external agencies like KfW, Germany.
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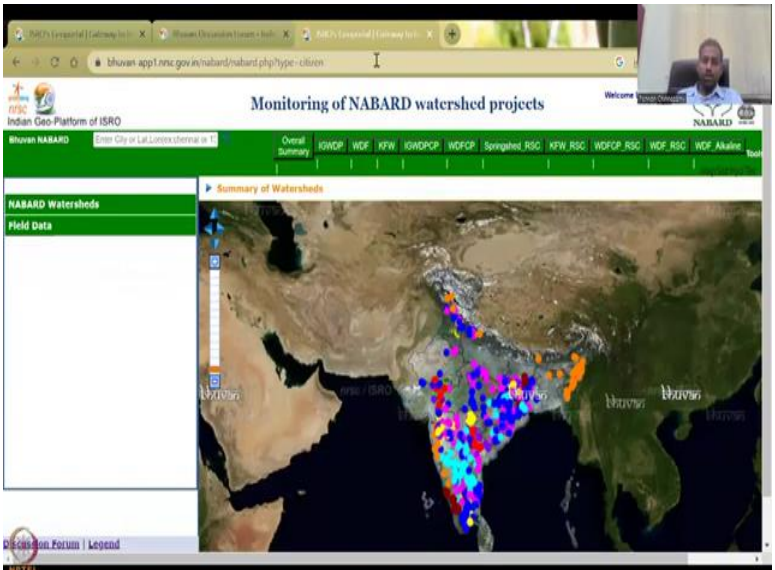
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Field Data
Summary of Watersheds
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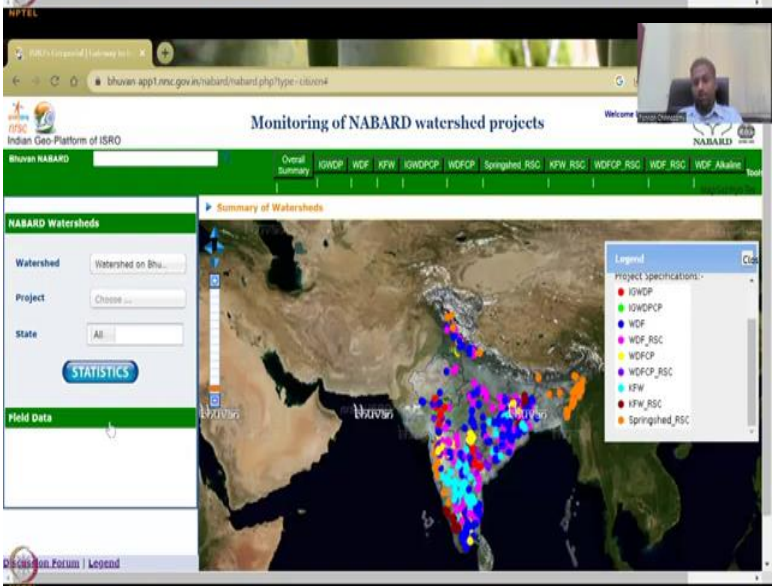
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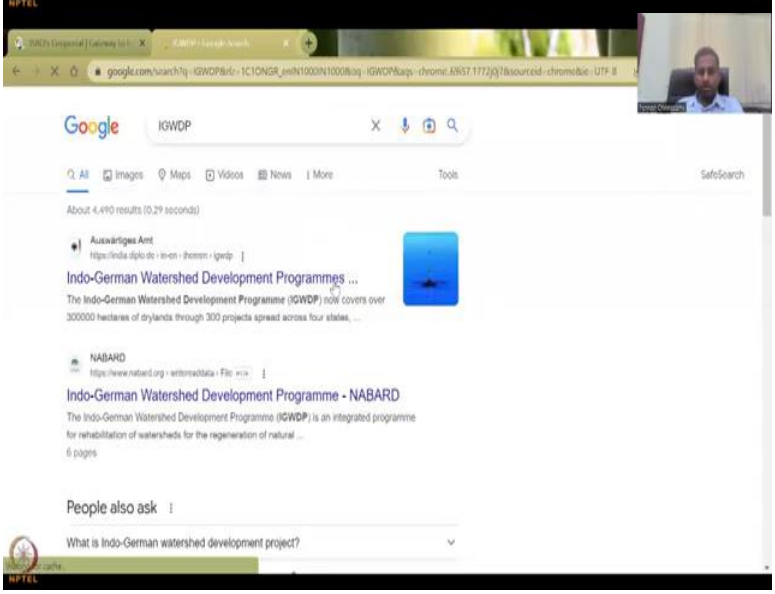
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6 pages
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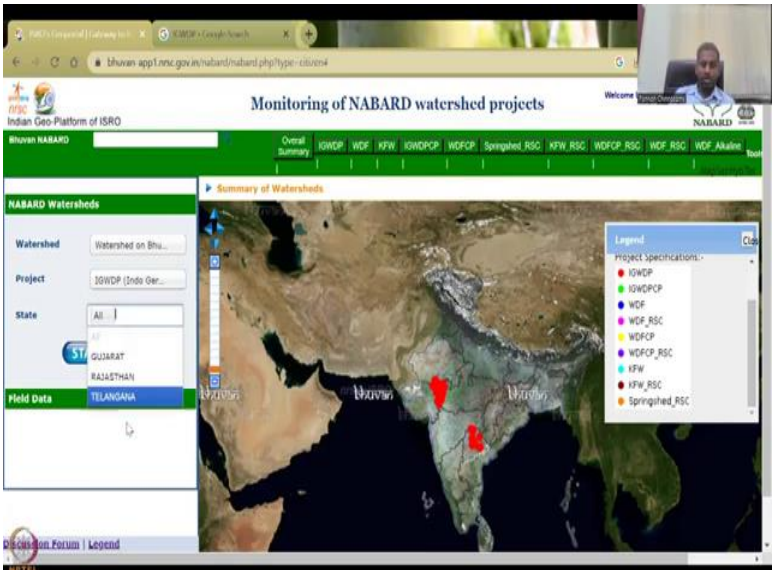
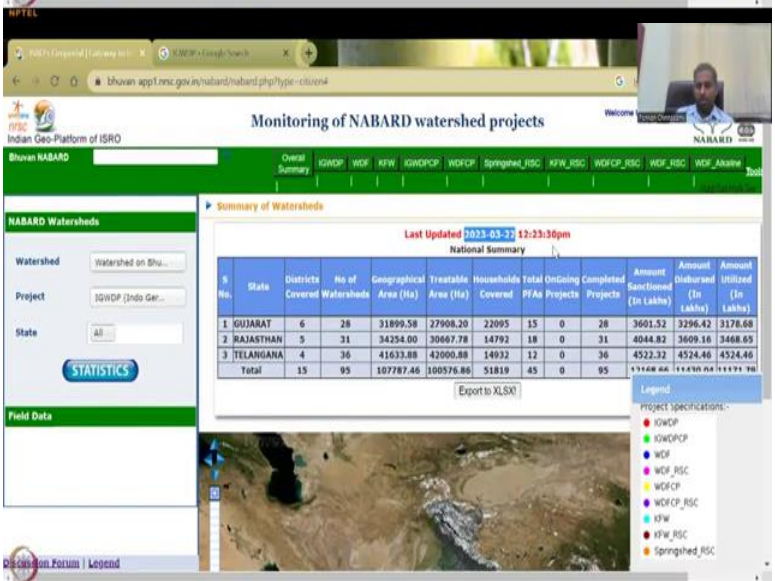
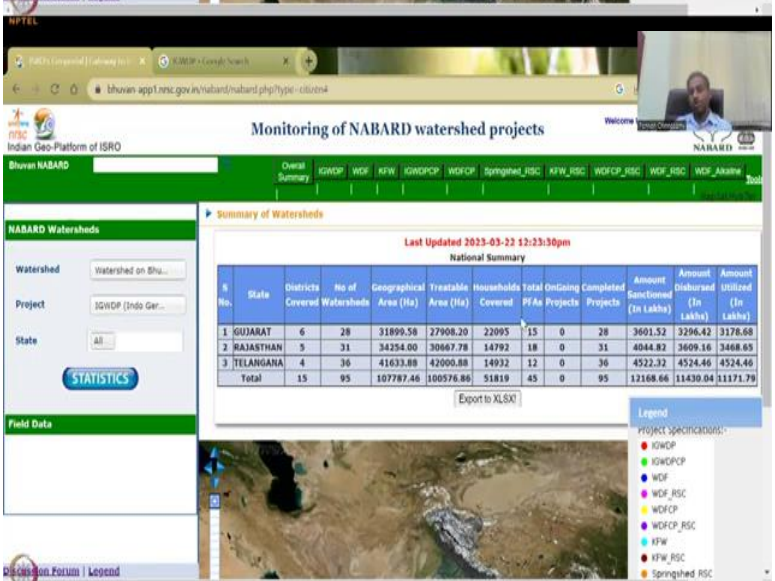
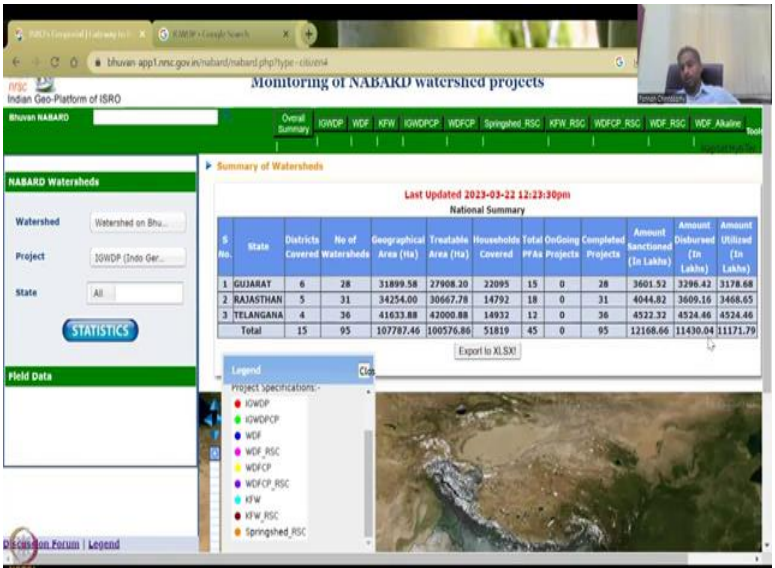




S No.	State	Districts Covered	No of Watersheds	Geographical Area (Ha)	Treatable Area (Ha)	Households Covered	Total PFAs	OnGoing Projects	Completed Projects	Amount Sanctioned (In Lakhs)	Amount Disbursed (In Lakhs)	Amount Utilized (In Lakhs)
1	GUJARAT	6	28	31899.58	27908.20	22095	15	0	28	3601.52	3296.42	3178.68
2	RAJASTHAN	5	31	34254.00	30667.78	14792	18	0	31	4044.82	3609.16	3468.65
3	TELANGANA	4	36	41633.88	42000.88	14932	12	0	36	4522.32	4524.46	4524.46
	Total	15	95	107787.46	100576.86	51819	45	0	95	12168.66	11430.04	11171.79



S No.	State	Districts Covered	No of Watersheds	Geographical Area (Ha)	Treatable Area (Ha)	Households Covered	Total PFAs	OnGoing Projects	Completed Projects	Amount Sanctioned (In Lakhs)	Amount Disbursed (In Lakhs)	Amount Utilized (In Lakhs)
1	GUJARAT	6	28	31899.58	27908.20	22095	15	0	28	3601.52	3296.42	3178.68
2	RAJASTHAN	5	31	34254.00	30667.78	14792	18	0	31	4044.82	3609.16	3468.65
3	TELANGANA	4	36	41633.88	42000.88	14932	12	0	36	4522.32	4524.46	4524.46
	Total	15	95	107787.46	100576.86	51819	45	0	95	12168.66	11430.04	11171.79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Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
NABARD Watersheds
Watershed
Watershed on Bhu...
Project
IGWDP (Indo Ger...
State
All
STATISTICS
Field Data
Summary of Watersheds
Last Updated 2023-03-22 12:23:30pm
National Summary
S No.
State
Districts Covered
No of Watersheds
Geographical Area (Ha)
Treatable Area (Ha)
Households Covered
Total PFAs
OnGoing Projects
Completed Projects
Amount Sanctioned (In Lakhs)
Amount Disbursed (In Lakhs)
Amount Utilized (In Lakhs)
1 GUJARAT 6 28 31899.58 27908.20 22095 15 0 28 3601.52 3296.42 3178.68
2 RAJASTHAN 5 31 34254.00 30667.78 14792 18 0 31 4044.82 3609.16 3468.65
3 TELANGANA 4 36 41633.88 42000.88 14932 12 0 36 4522.32 4524.46 4524.46
Total 15 95 107787.46 100576.86 51819 45 0 95 12168.66 11430.04 11171.79
Export to XLSX!
Legend
Project Specifications:-
IGWDP
IGWDPCP
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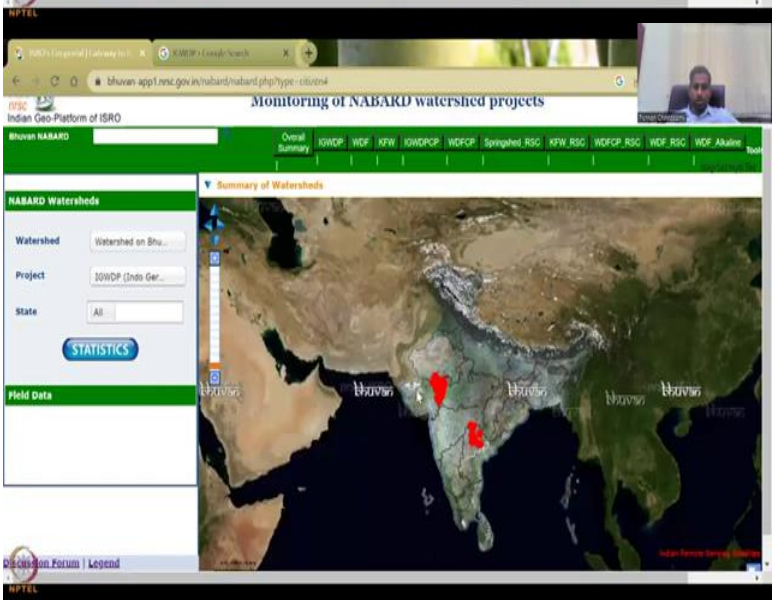
WDF_RSC
WDFCP
WDFCP_RSC
KFW
KFW_RSC
Springshed_RSC
Discussion Forum | Legend
NPTEL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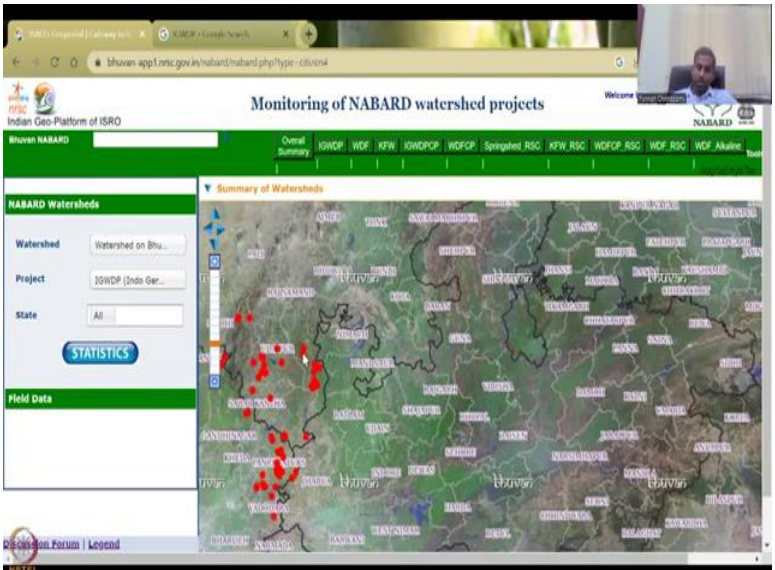
Indian Geo-Platform of ISRO
Bhuvan NABARD
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
NABARD Watersheds
Watershed
Watershed on Bhu...
Project
IGWDP (Indo Ger...
State
All
STATISTICS
Field Data
Summary of Watersheds
Discussion Forum | Legend
NPTEL


Monitoring of NABARD watershed projects
Indian Geo-Platform of ISRO
Bhuvan NABARD
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
NABARD Watersheds
Watershed
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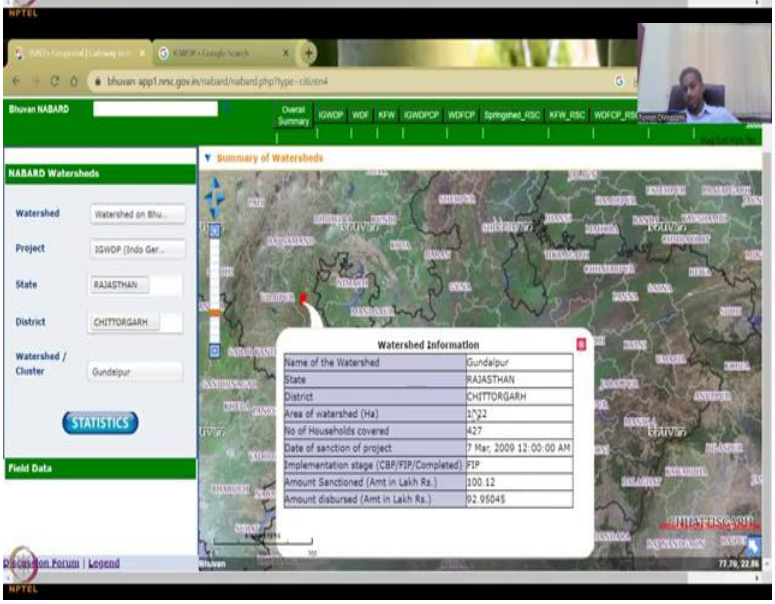
IGWDP (Indo Ger...
State
All
STATISTICS
Field Data
Summary of Watersheds
Discussion Forum | Legend
NPTEL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NABARD Watersheds
Watershed
Watershed on Bhu...
Project
IGWDP (Indo Ger...
State
RAJASTHAN
District
CHITTORGARH
Watershed / Cluster
Gundalpur
STATISTICS
Field Data
Summary of Watersheds
Watershed Information
Name of the Watershed
Gundalpur
State
RAJASTHAN
District
CHITTORGARH
Area of watershed (Ha)
1722
No of Households covered
427
Date of sanction of project
7 Mar, 2009 12:00:00 AM
Implementation stage (CBP/FIP/Completed)
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Amount Sanctioned (Amt in Lakh Rs.)
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Amount disbursed (Amt in Lakh Rs.)
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Discussion Forum | Legend
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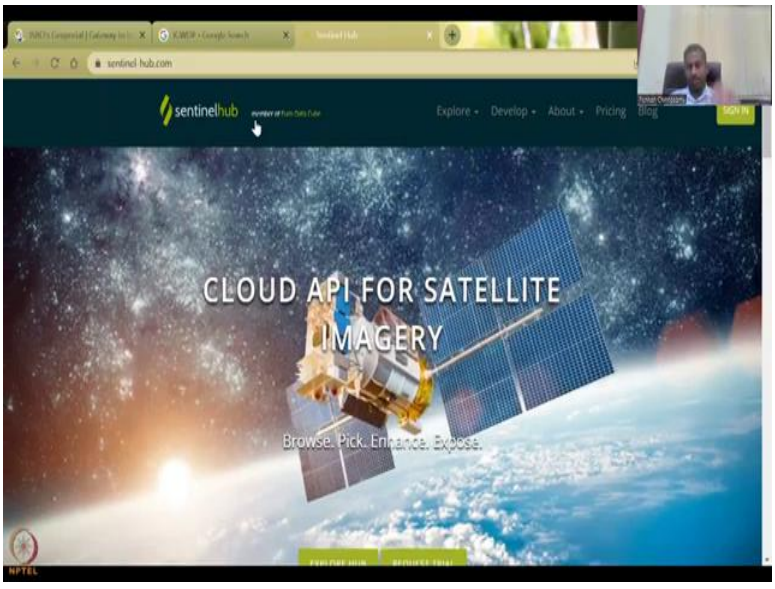
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So, we have this you can select a particular region as I said you have seen so just in this colours it could be anything the legend is here you can see the legends. It says the projects which projects are there IGWDP, WDF all these are both national and international content supported projects, we have springshed RSC of the spring areas in Maharashtra we have springs in the Western Ghats and all the Himalayan regions.

And which are very, very important. If you recollect this with the ground water maps that we discussed earlier. You know this belt is highly ground water depleted, but very less schemes now. So, maybe you could propose using those data to the government saying that they should put more structures there. So, we have this and then there is a discussion forum you can click on to see how things work.

The way you can have updates, usability, what data you want to have so you can just say here just someone fifteen days ago have asked can you put some other data on to it and then use for students you will be given for free for students and then how to use it etcetera. So, you can have these in this currently today's date and any updates very, very recent forum you could see.

And then also the NABARD Bhuvan will also take you the Google page or some people may take due to the this one. So, this link will ask you sometimes to log in. So, you can also log in as a citizen you come down you can say you can log in as a citizen or you can use if you are working with the government they will give you these data. So, there is a user manual by mobile app download new version has been released.

So, if you click on citizen it will open the same page that we have here. So, just bandwidth I will reduce these pages and then we will also close the other one so that bandwidth is there. So, now we are here these are the different schemes you can see on the top and you can select the scheme you want and why is it being done. You have to read about these scheme so for example the IGWDP if I just type IGWDP and watershed development program will come.

So, let us see there is Indo German Watershed Development Programme will come. So, let us see that is Indo German Watershed Development Programme. As I said these are through government fellowships and partnerships and it has 30,000 hectares of dry lands through 300 projects across India four states. So, it is a very good initiate so the other end indicates that and we can see. So, let us start.

So, NABARD Watershed you can click on a watershed on Bhuvan and then the project as I said all these projects you can individually click. So, I have know about the ideas IGWDP so let us click that and then you can see where states where the locations are and all the states even all the states or the three states the data is there. Here it says four states however right now the update is only at three states that is fine let us keep it all.

There might be these interesting things. So, the last update is on March 22 just very, very recently and you have these states or you can download the data export it to excel and also you can see how many districts are covered, number of watersheds that are covered and then area treatable area, households cover, how many households beneficiaries, but this is what is needed for evaluation of the programme.

And then the total PFAs, ongoing projects, completed projects. So, ongoing is 0 then completed, amount sanctioned and amount distributed the sanction and distributed should become same and utilize in lakhs is there. So, this is around sanctioned is around if you say is 121 crores because it is in lakhs so 122 crores you can say. So, that is how much money has been put in this scheme and now you can click this to zoomed out.

You need to click this out and then zoom in to see which locations are having these watershed programme. You can click on a particular dot it will tell you what the locations are, for example, name of the watershed is Gundalpur, Rajasthan, Chittorgarg, and then all these things are given in these and how much amount of distributor and then how much has been done.

So, it is 1 crore project in this area and the data sanction is this. So, now what you could do is use multiple data sources to go and see the effect here. The name of the watershed is Gundalpur and district is Chittogarh and now you know that let us do this Sentinel Hub quickly as an evaluation tool because that is what is missing here. So, what you see here is location, but still is very, very important.

But you do not see any evaluation and monitoring which what we will be doing. You have the statistics of the data and also the when it came into existence. So, you will have to juggle between these websites, you have juggle between the Indian data side and a good remote sensing dataset like this and then you can just quickly the data.

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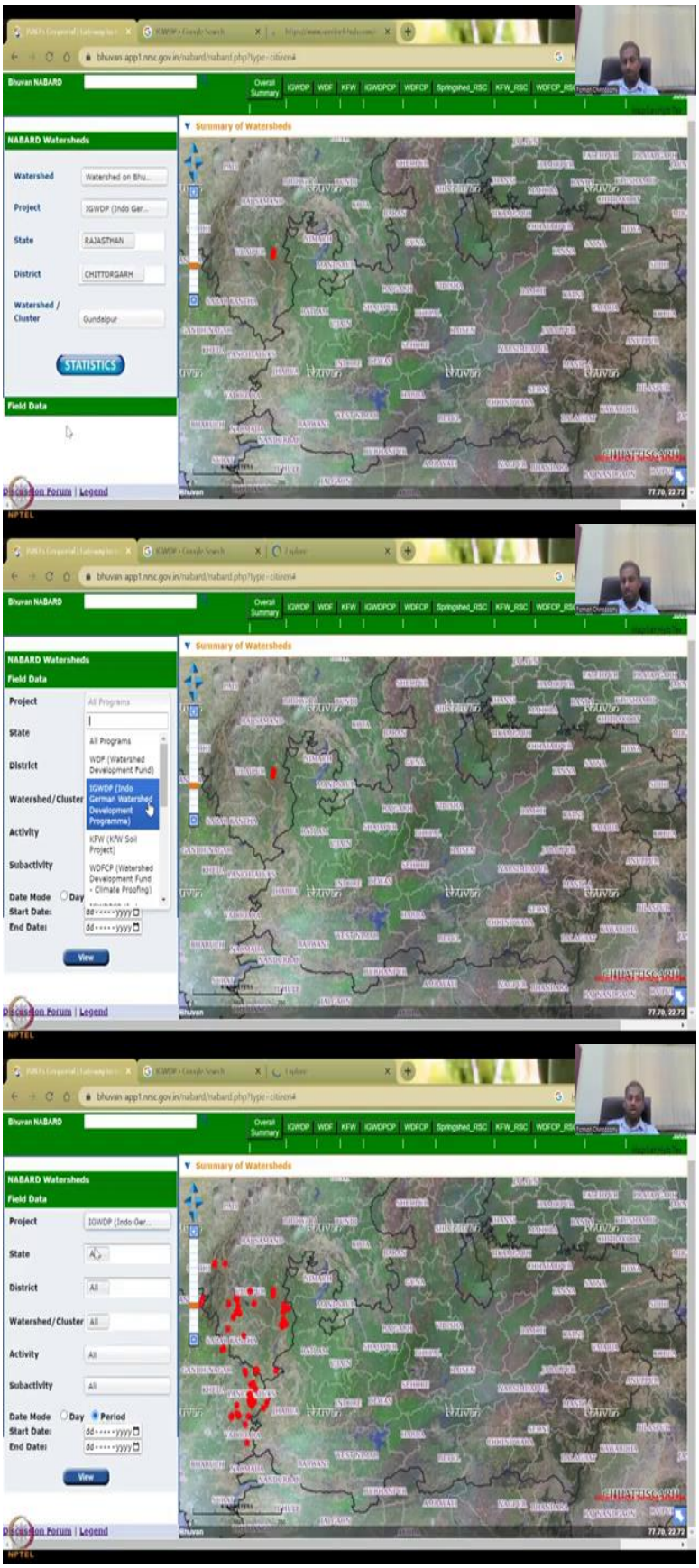

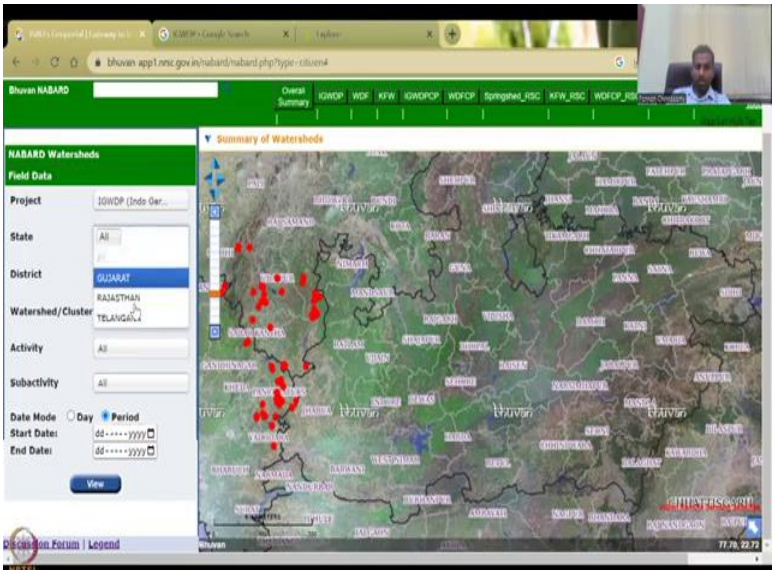
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Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
NABARD Watersheds
Field Data
Project
IGWDP (Indo Ger...
State
All
District
GUJARAT
RAJASTHAN
TELANGANA
Watershed/Cluster
Activity
All
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Period
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End Date:
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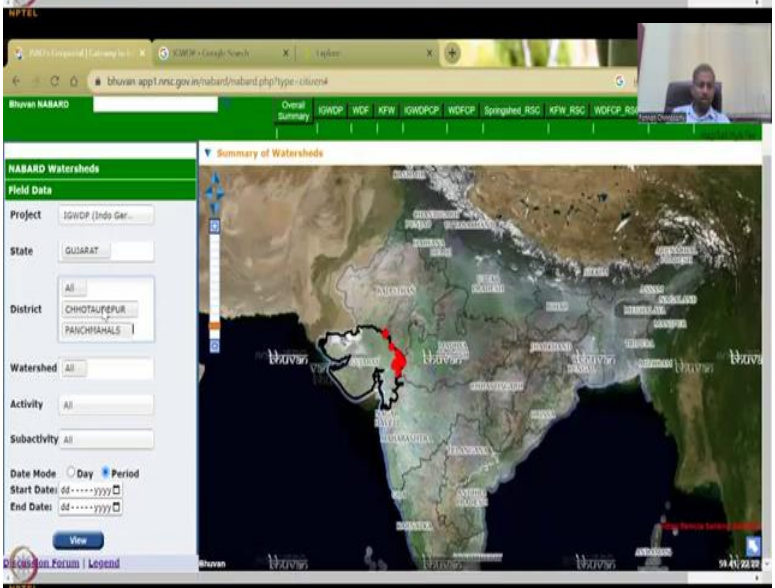
View
Discussion Forum | Legend
Summary of Watersheds
NPTEL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Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
NABARD Watersheds
Field Data
Project
IGWDP (Indo Ger...
State
GUJARAT
District
All
CHHOTAUDEPUR
PANCHMAHALS
Watershed
All
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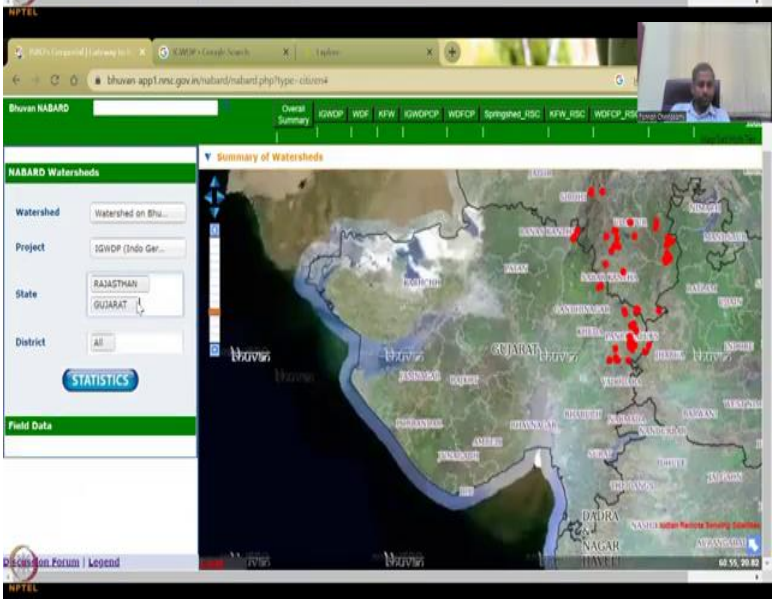
Discussion Forum | Legend
Summary of Watersheds
NPTEL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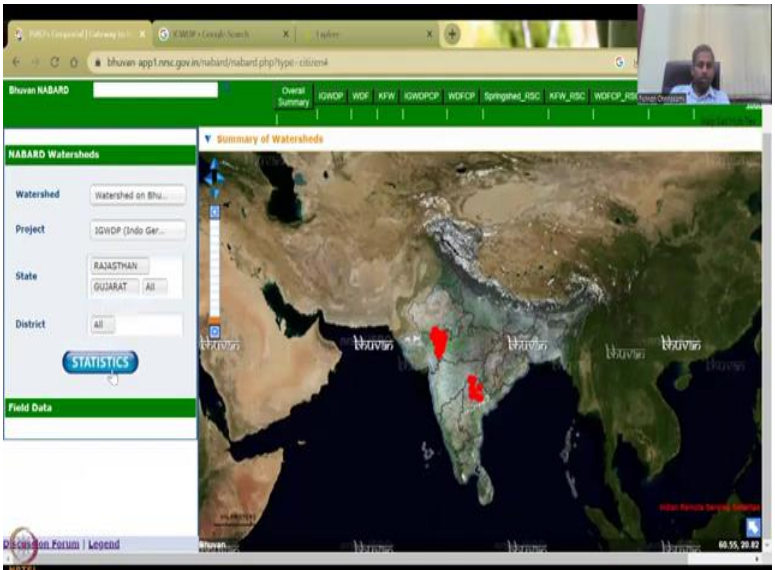
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
NABARD Watersheds
Watershed
Watershed on Bhu...
Project
IGWDP (Indo Ger...
State
RAJASTHAN
GUJARAT
District
All
STATISTICS
Field Data
Discussion Forum | Legend
Summary of Watersheds
GUJARAT
DADRA
NAGAR
HAVELI
NPTEL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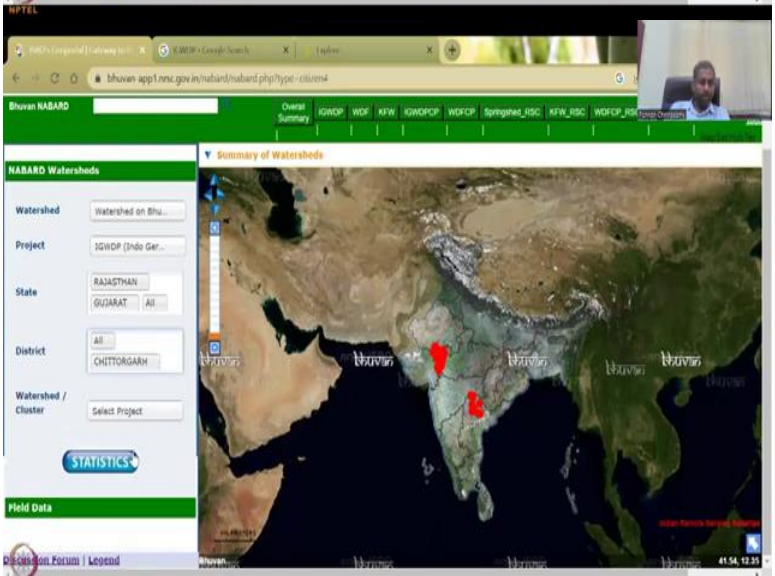
Overal Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
NABARD Watersheds
Watershed
Watershed on Bhu...
Project
IGWDP (Indo Ger...
State
RAJASTHAN
GUJARAT
All
District
All
STATISTICS
Field Data
Summary of Watersheds
Discussion Forum | Legend
NPTEL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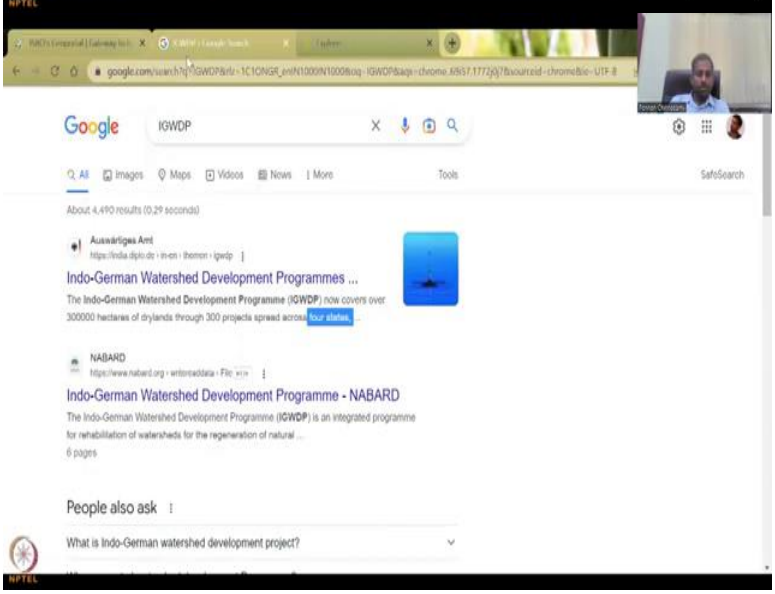
Bhuvan NABARD
Overal Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
NABARD Watersheds
Watershed
Watershed on Bhu...
Project
IGWDP (Indo Ger...
State
RAJASTHAN
GUJARAT
All
District
All
CHITTORGARH
Watershed / Cluster
Select Project
STATISTICS
Field Data
Summary of Watersheds
Discussion Forum | Legend
NPTEL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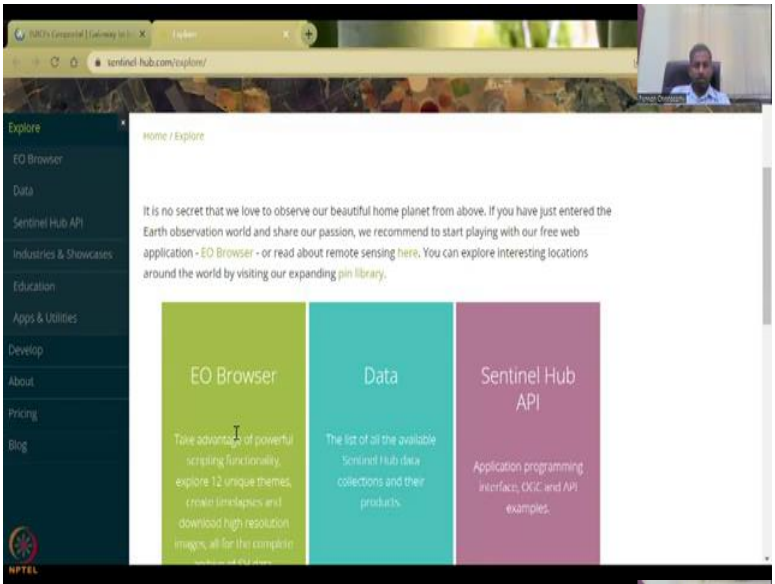
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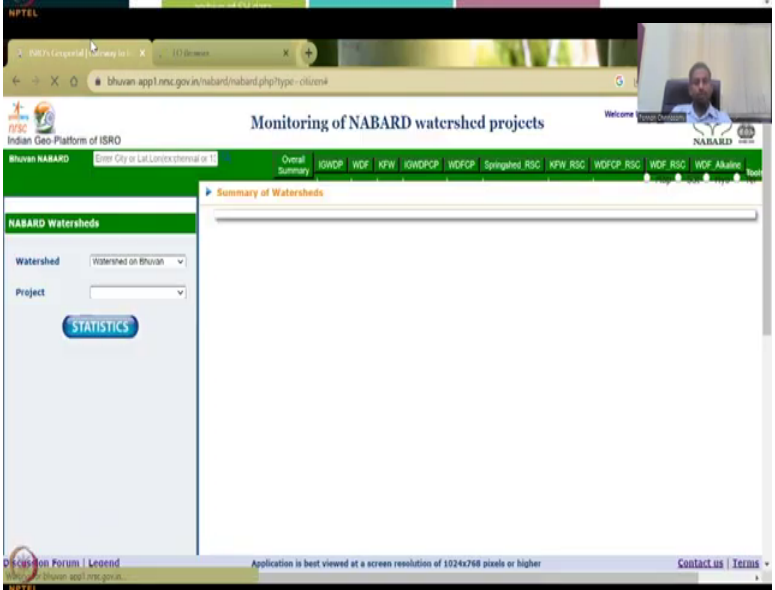
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Indian Geo-Platform of ISRO
Monitoring of NABARD watershed projects
NABARD
Bhuvan NABARD
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
Summary of Watersheds
NABARD Watersheds
Watershed
Watershed on Bhuvan
Project
STATISTICS
Discussion Forum | Legend
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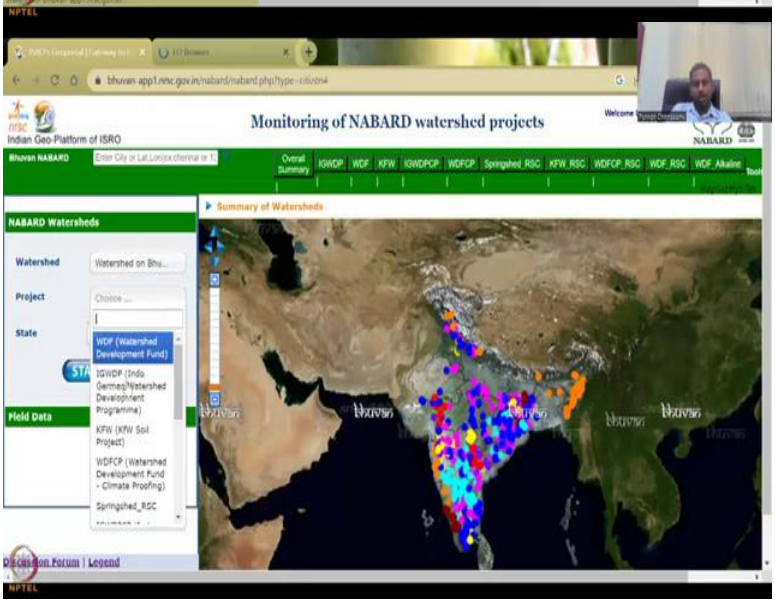
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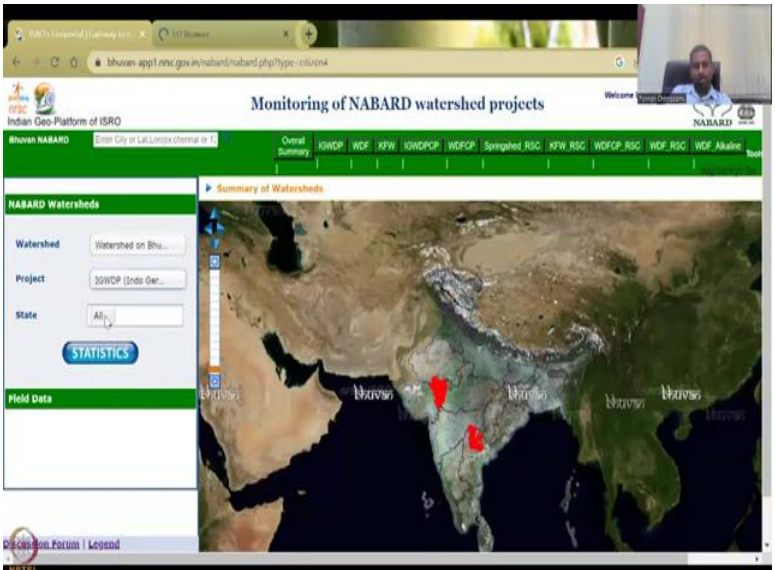
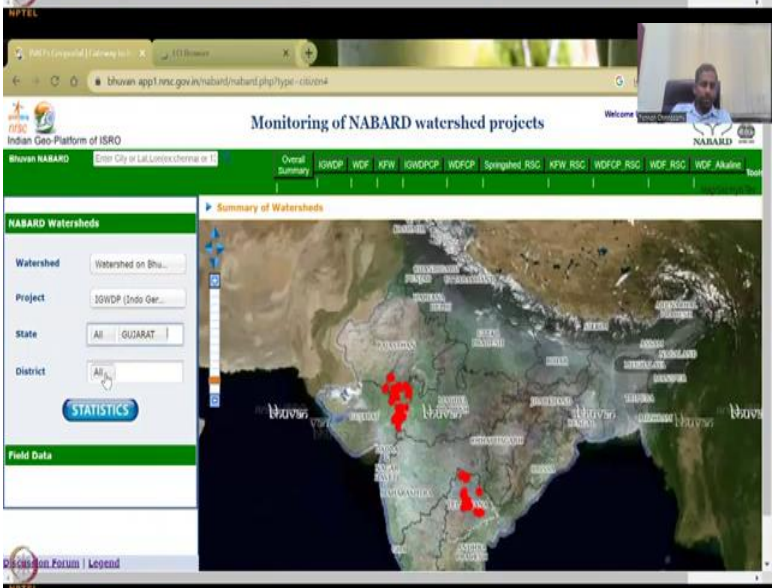
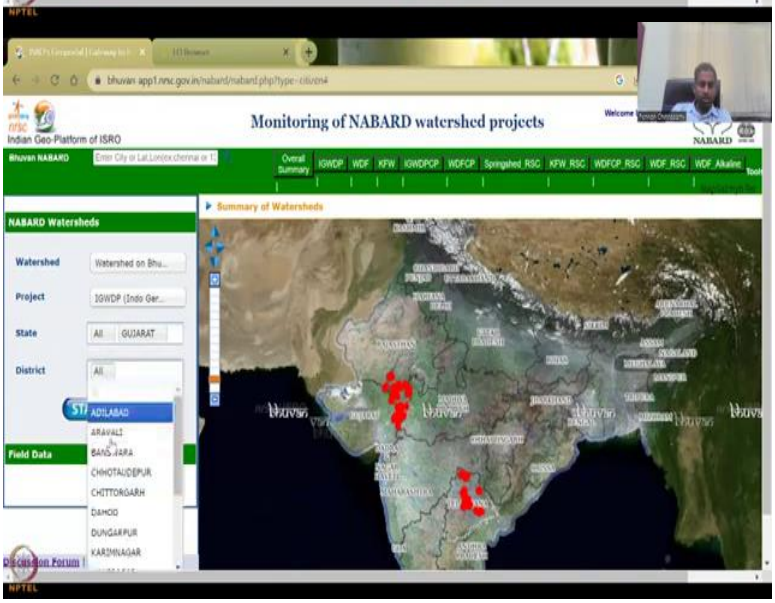
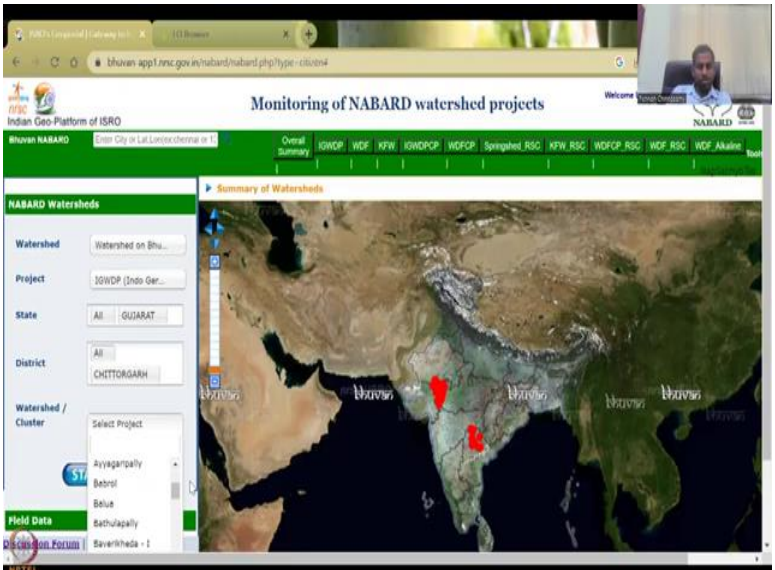
Indian Geo-Platform of ISRO
Monitoring of NABARD watershed projects
NABARD
Bhuvan NABARD
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
Summary of Watersheds
NABARD Watersheds
Watershed
Project
State
WDF (Watershed Development Fund)
IGWDP (Indo-German Watershed Development Programme)
KFW (KFW Soil Project)
WDFCP (Watershed Development Fund - Climate Proofing)
Springshed_RSC
Field Data
Discussion Forum | Legend
NPTEL


Monitoring of NABARD watershed projects
Indian Geo-Platform of ISRO
Bhuvan NABARD
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
NABARD Watersheds
Watershed
Watershed on Bhu...
Project
IGWDP (Indo Ger...
State
All
STATISTICS
Field Data
Summary of Watersheds
Discussion Forum | Legend
NPTEL


Monitoring of NABARD watershed projects
Indian Geo-Platform of ISRO
Bhuvan NABARD
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
NABARD Watersheds
Watershed
Watershed on Bhu...
Project
IGWDP (Indo Ger...
State
All
GUJARAT
District
All
STATISTICS
Field Data
Summary of Watersheds
Discussion Forum | Legend
NPTEL


Monitoring of NABARD watershed projects
Indian Geo-Platform of ISRO
Bhuvan NABARD
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
NABARD Watersheds
Watershed
Watershed on Bhu...
Project
IGWDP (Indo Ger...
State
All
GUJARAT
District
All
ADILABAD
ARAVALI
BANSJARA
CHHOTAUDEPUR
CHITTORGARH
DAHOD
DUNGARPUR
KARIMNAGAR
Field Data
Summary of Watersheds
Discussion Forum
NPTEL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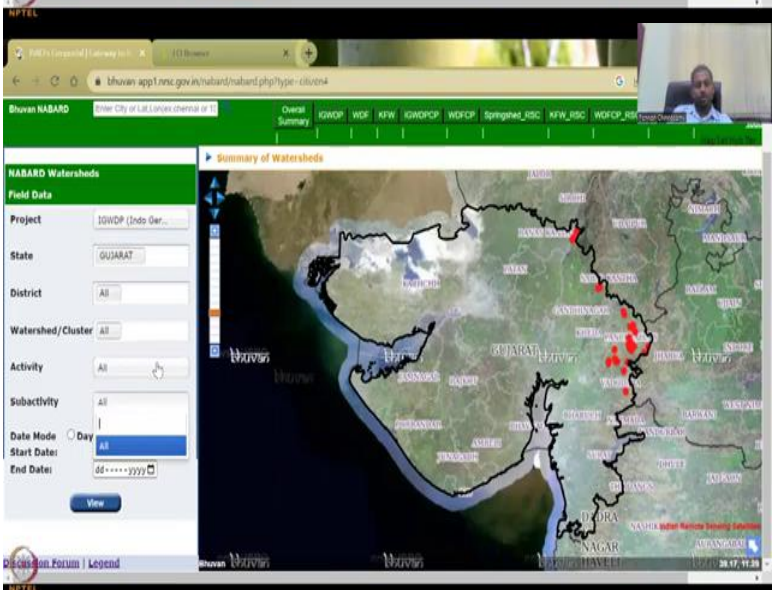
Indian Geo-Platform of ISRO
Bhuvan NABARD
NABARD Watersheds
Watershed
Project
State
District
Watershed / Cluster
Field Data
Discussion Forum
Summary of Watersheds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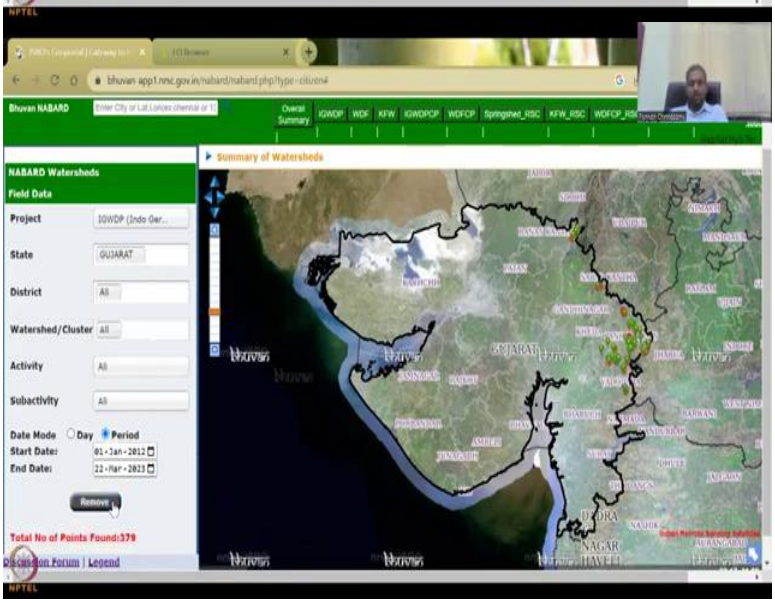
NABARD Watersheds
Field Data
Project
State
District
Watershed/Cluster
Activity
Subactivity
Date Mode
Start Date:
End Date:
View
Discussion Forum | Legend
Summary of Watersheds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NABARD Watersheds
Field Data
Project
State
District
Watershed/Cluster
Activity
Subactivity
Date Mode
Start Date:
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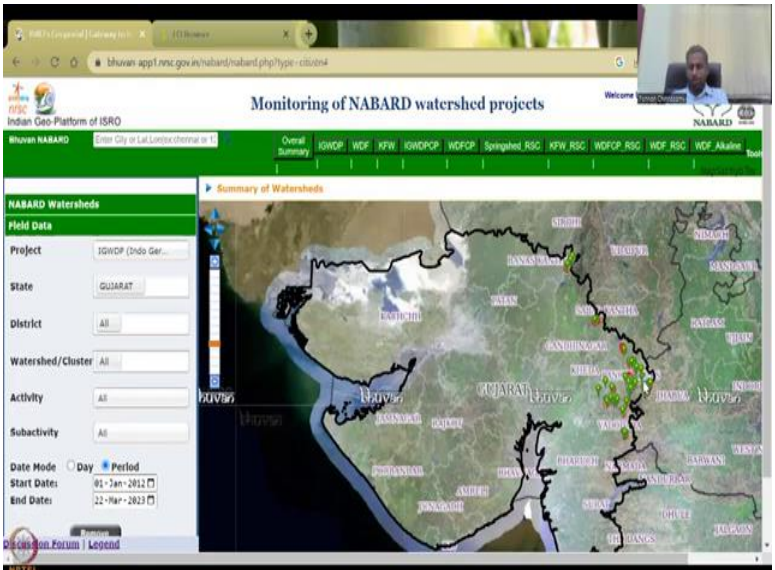
Discussion Forum | Legend
Summary of Watersheds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Monitoring of NABARD watershed projects
Indian Geo-Platform of ISRO
Bhuvan NABARD
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
NABARD Watersheds
Field Data
Project
IGWDP (Indo Ger...
State
GUJARAT
District
All
Watershed/Cluster
All
Activity
All
Subactivity
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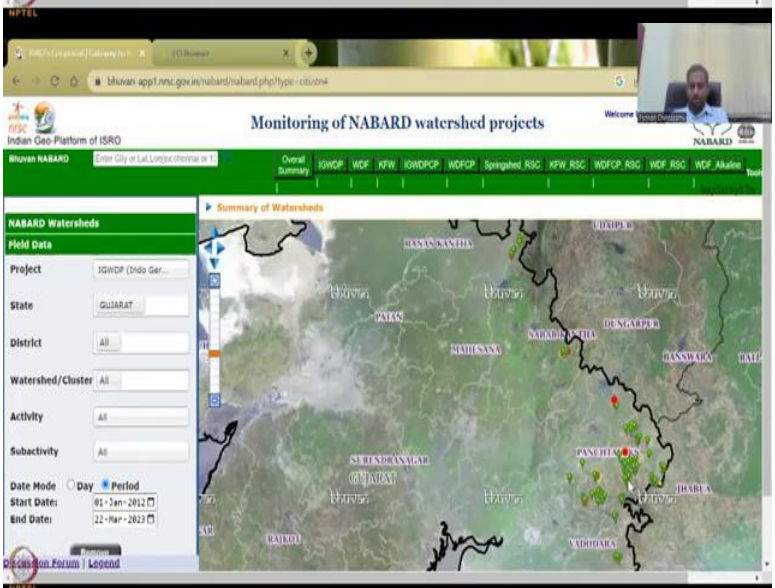
Date Mode
Day
Period
Start Date:
01-Jan-2012
End Date:
22-Mar-2023
Discussion Forum | Legend
Summary of Watersheds
GUJARAT
NPTEL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Monitoring of NABARD watershed projects
Indian Geo-Platform of ISRO
Bhuvan NABARD
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
NABARD Watersheds
Field Data
Project
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GUJARAT
District
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Watershed/Cluster
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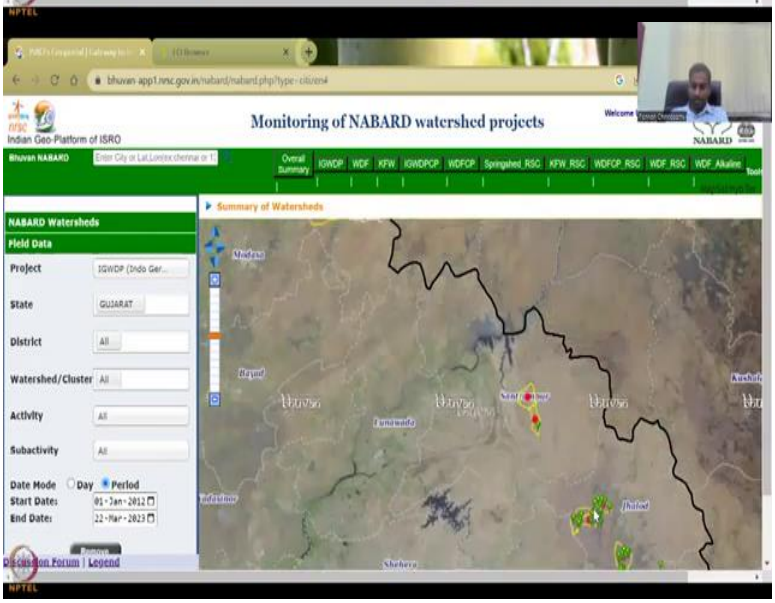
Activity
All
Subactivity
All
Date Mode
Day
Period
Start Date:
01-Jan-2012
End Date:
22-Mar-2023
Discussion Forum | Legend
Summary of Watersheds
GUJARAT
NPTEL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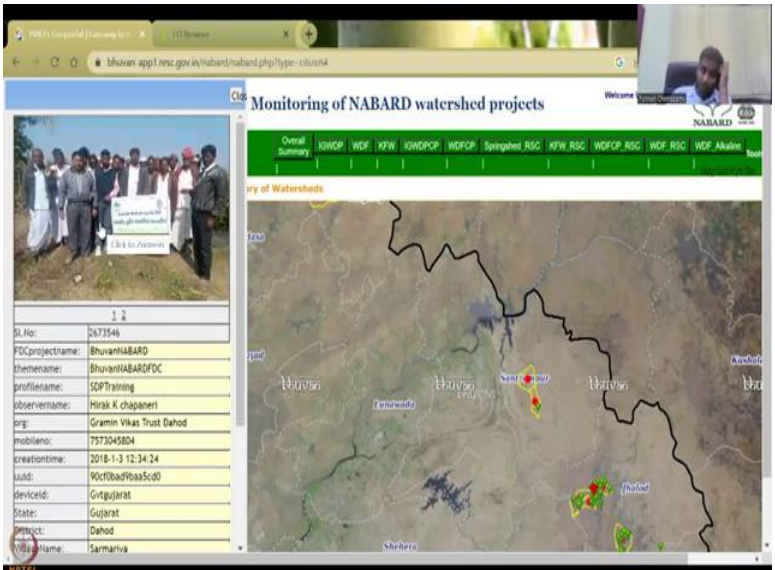
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IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
WDFCP_RSC
WDF_RSC
WDF_Alkaline
Sl.No: 2673546
FDCprojectname: BhuvanNABARD
themename: BhuvanNABARDFDC
profilename: SDPTraining
observername: Hirak K chapaneri
org: Gramin Vikas Trust Dahod
mobileno: 7573045804
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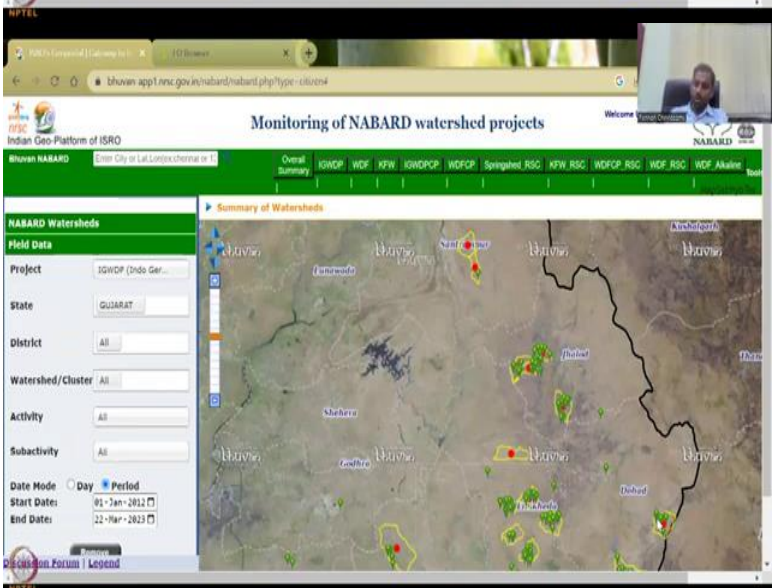
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Bhuvan NABARD
Summary of Watersheds
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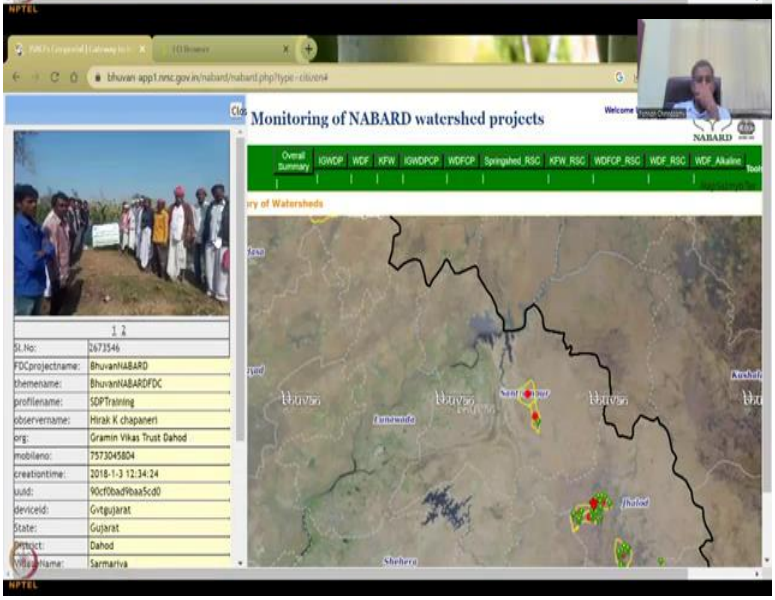
Discussion Forum | Legend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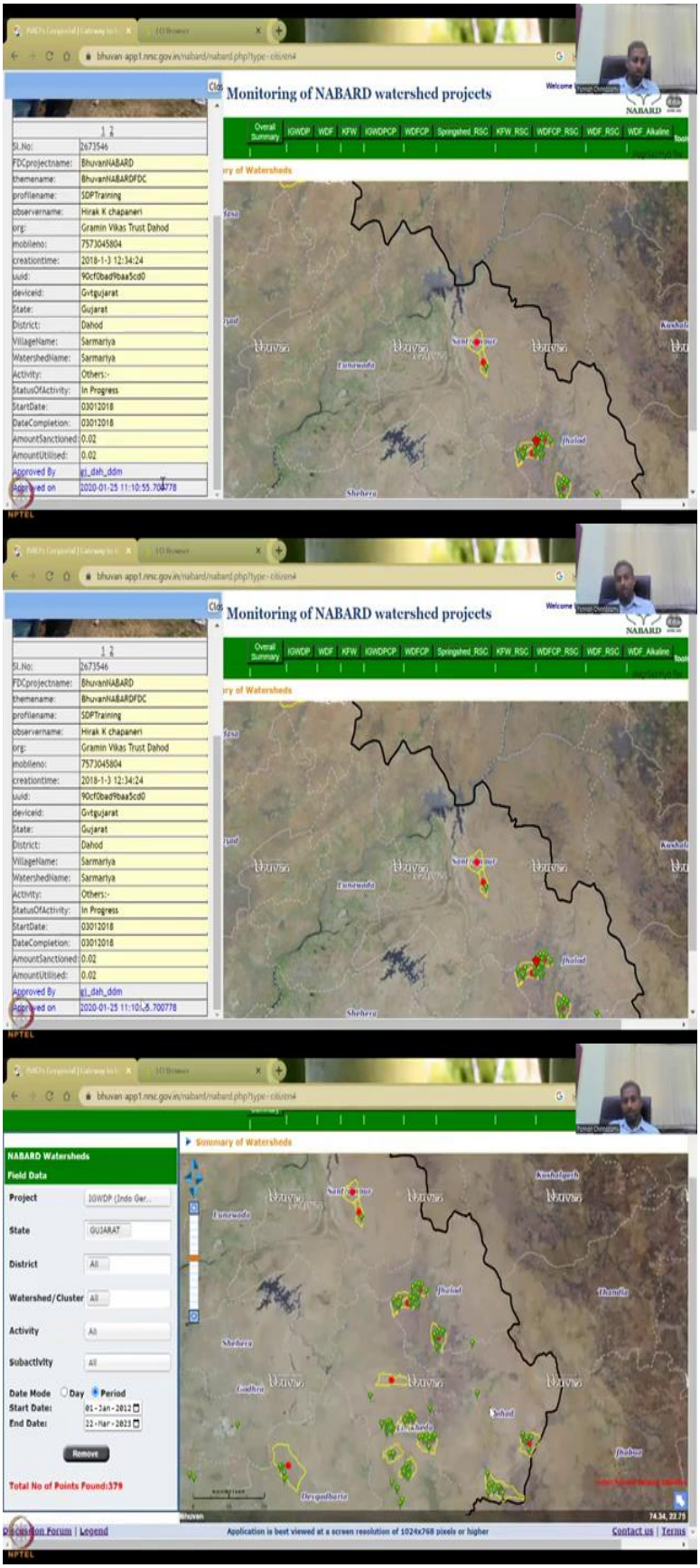
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Monitoring of NABARD watershed projects
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org: Gramin Vikas Trust Dahod
mobileno: 7573045804
creationtime: 2018-1-3 12:34:24
uuid: 90cf0bad9baa5cd0
deviceid: Gvtgujarat
State: Gujarat
District: Dahod
VillageName: Sarmariya
WatershedName: Sarmariya
Activity: Others:-
StatusOfActivity: In Progress
StartDate: 03012018
DateCompletion: 03012018
AmountSanctioned: 0.02
AmountUtilised: 0.02
Approved By gj_dah_ddm
Approved on 2020-01-25 11:10:55.700778
Summary of Watersheds
NABARD Watersheds
Field Data
Project IGWDP (Indo Ger...
State GUJARAT
District All
Watershed/Cluster All
Activity All
Subactivity All
Date Mode Day Period
Start Date: 01-Jan-2012
End Date: 22-Mar-2023
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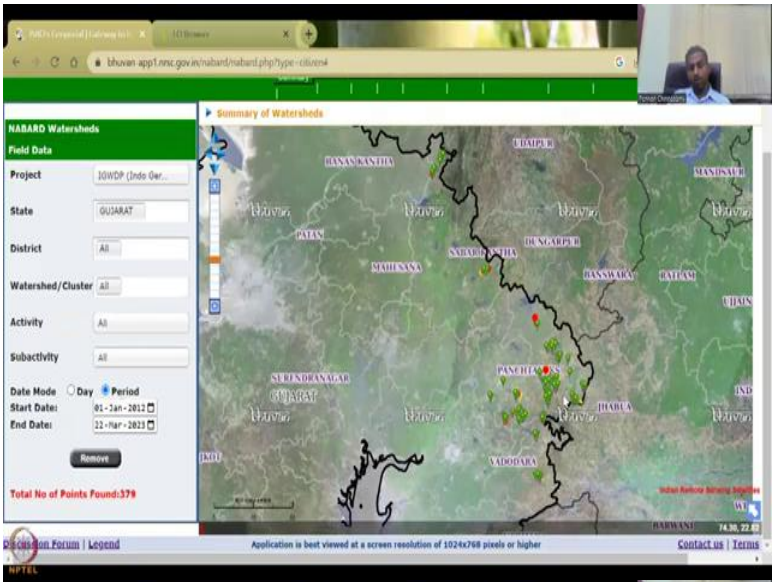
Discussion Forum | Legend
Application is best viewed at a screen resolution of 1024x768 pixels or higher
Contact us | Terms
NPTEL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NABARD Watersheds
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Summary of Watersheds
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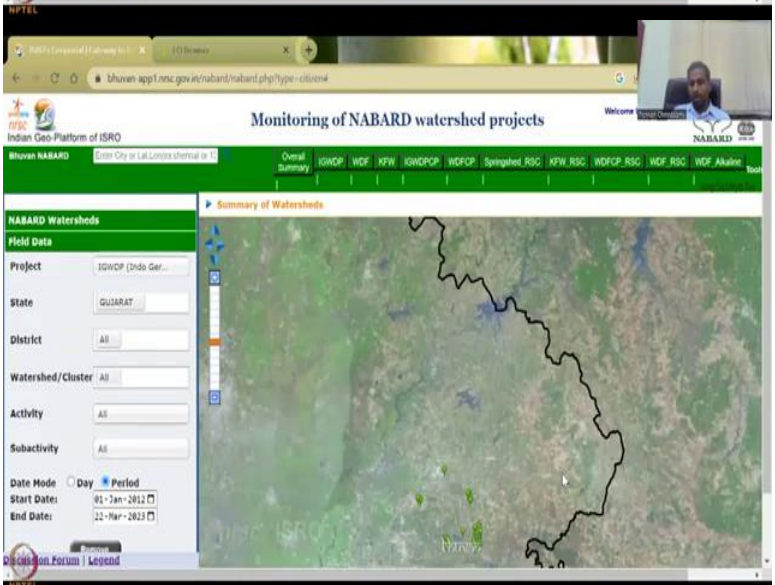
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Monitoring of NABARD watershed projects
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NABARD
Bhuvan NABARD
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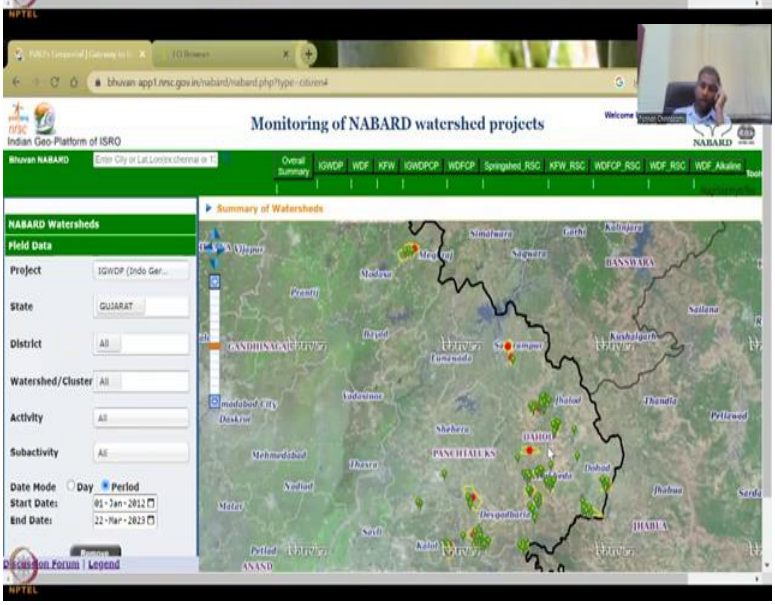
Discussion Forum | Legend
NPTEL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Monitoring of NABARD watershed projects
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NABARD
Bhuvan NABARD
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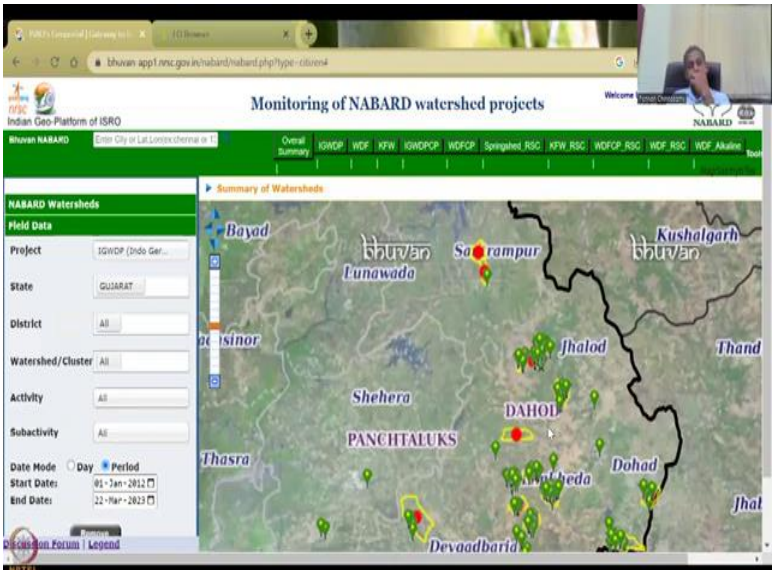
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Bhuvan NABARD
NABARD Watersheds
Field Data
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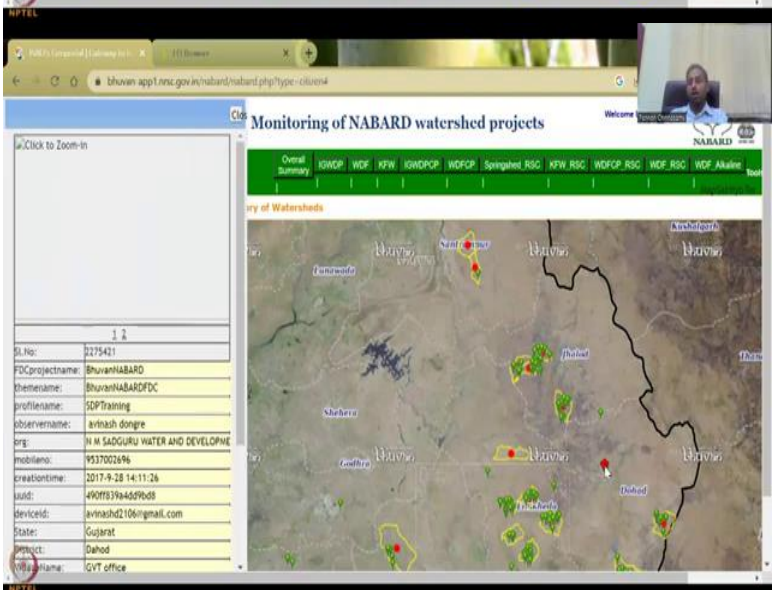
Discussion Forum | Legend
Summary of Watersheds
Bayad
Lunawada
Sa rampur
Kushalgarh
Jhalod
Shehera
DAHOD
PANCHTALUKS
Thasra
Dohad
Devaadbaria


Monitoring of NABARD watershed projects
Click to Zoom-In
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themename: BhuvanNABARDFDC
profilename: SDPTraining
observername: avinash dongre
org: N M SADGURU WATER AND DEVELOPME
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creationtime: 2017-9-28 14:11:26
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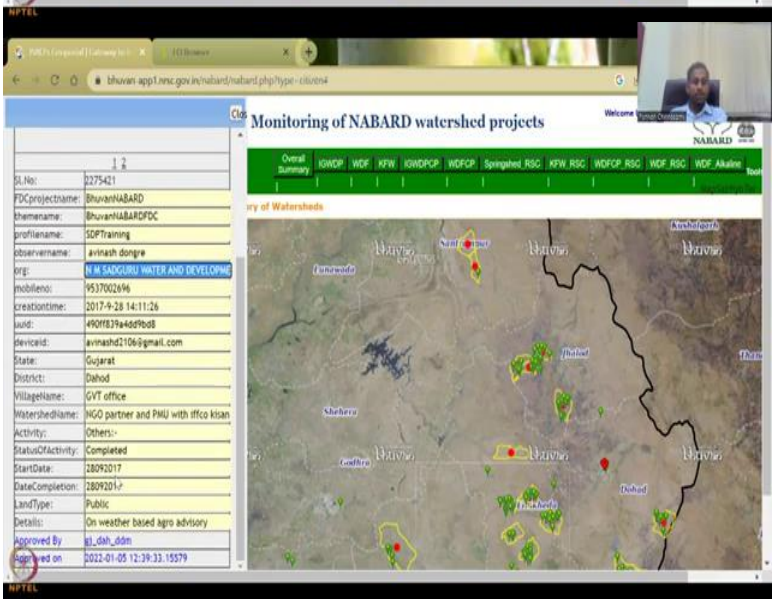
deviceid: avinashd2106@gmail.com
State: Gujarat
District: Dahod
VillageName: GVT office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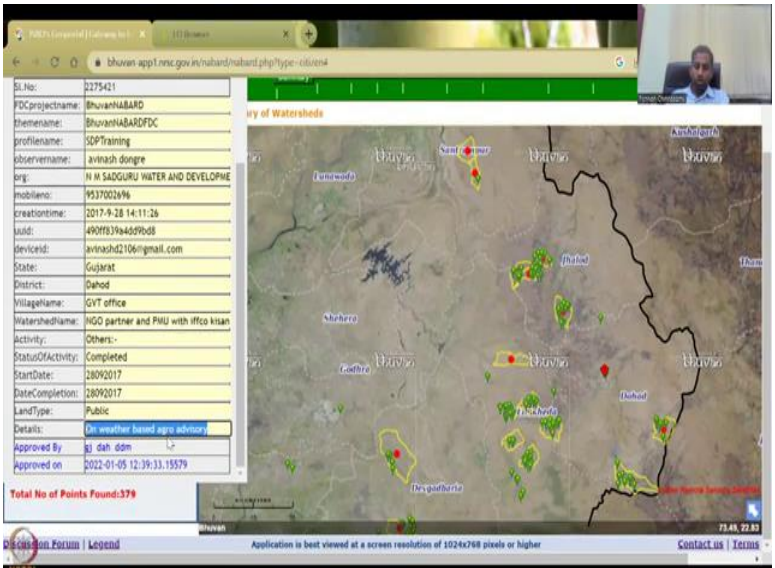
deviceid: avinashd2106@gmail.com
State: Gujarat
District: Dahod
VillageName: GVT office
WatershedName: NGO partner and PMU with tffco kisan
Activity: Others:-
StatusOfActivity: Completed
StartDate: 28092017
DateCompletion: 28092017
LandType: Public
Details: On weather based agro advisory
Approved By gj_dah_ddm
Approved on 2022-01-05 12:39:33.15579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Details: On weather based agro advisory
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Approved on 2022-01-05 12:39:33.15579
Total No of Points Found:379
Discussion Forum | Legend
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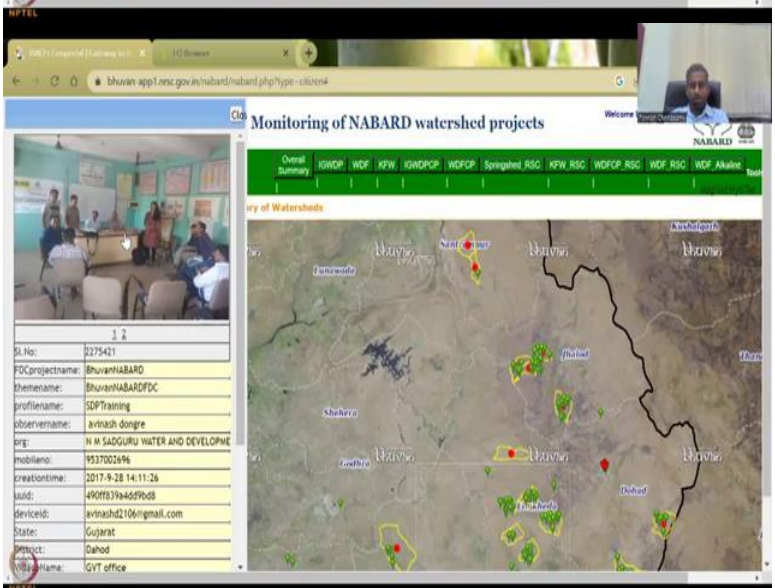
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Monitoring of NABARD watershed projects
NABARD
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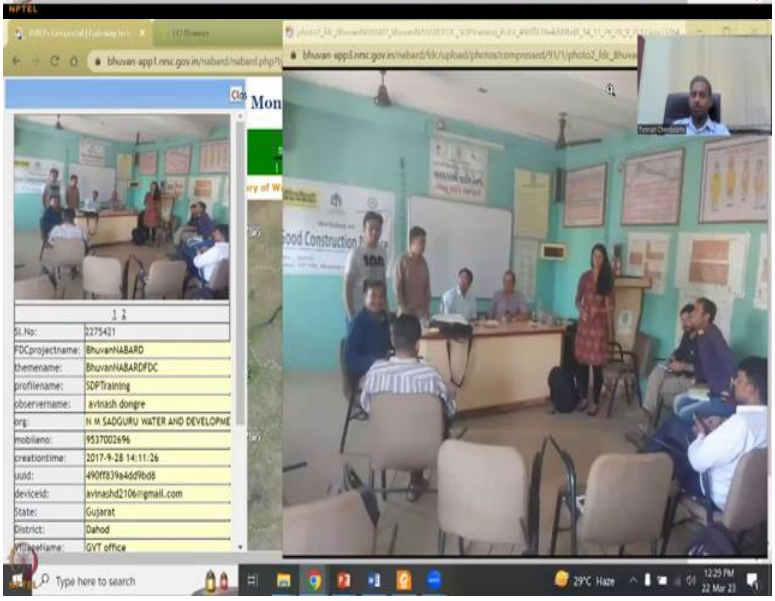
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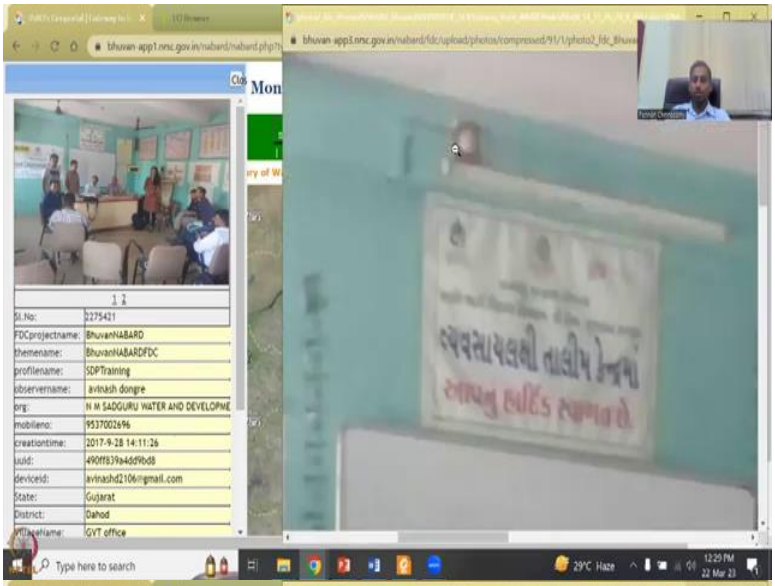
29°C Haze
12:25 PM
22 Mar 23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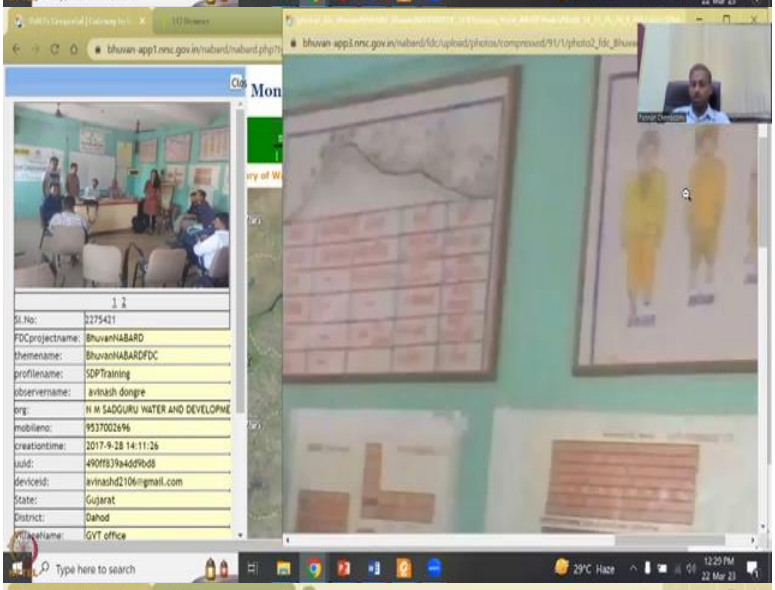
12:29 PM
22 Mar 23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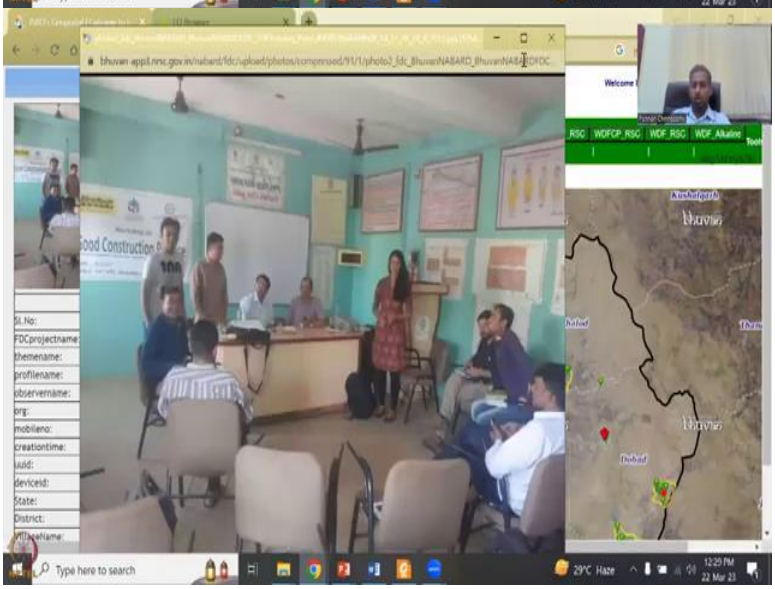
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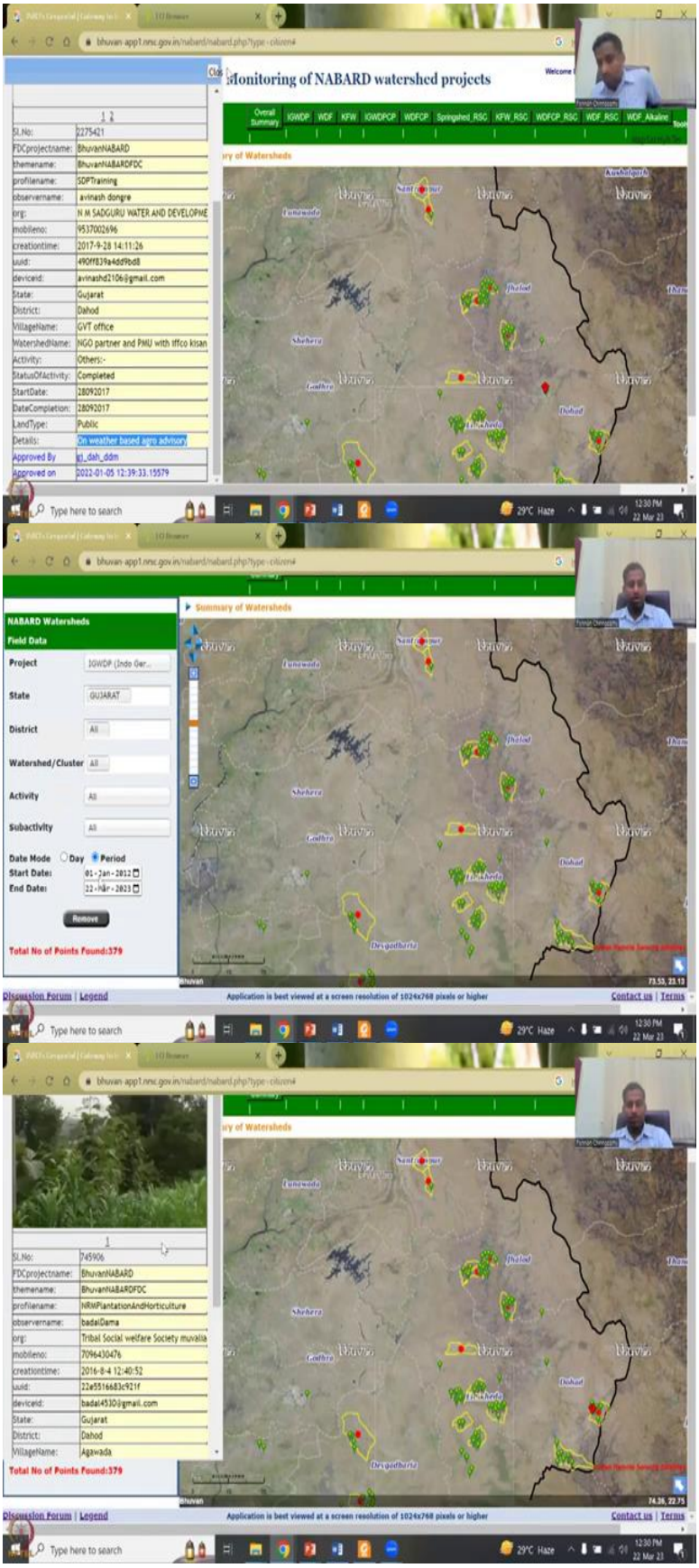
22 Mar 23



So, while that is happening let us keep this up and then you can click the field data here. You can also collect the data for each programme let us say IGWP in the same programme we can

choose. All states can happen you can click here you can see the same three states now four states elaborately keep there which district you want to see all district you can also say Gujarat all districts, watershed clusters all activity what kind of activity you want to see so Gujarat is now taken.

And then let us click all and then this is the field data and then which watershed we were looking at Gundalpur. District of Chittogarh or Rajasthan we can do Rajasthan also. So, I am going to click Gujarat all districts we can take Chittogarh and then all you can take and then statistics can come in. So, these are the different statistics. It is very hard to clear you do not see a clear button.

So, the only way is to refresh it while this comes up. So, I am just going to refresh these buttons. So, it just take some time to refresh and then let us go to EO hub. Meanwhile scroll. So, in the NABARD watershed I am going to select IGWPDP and then state let us select just Gujarat for now and then district, you cannot remove all which is interesting and then all I can say Chittorgarh.

But still all will be there you cannot remove all for some reasons and then all or which watershed cluster you would like to see for now let us say all. So, all the statistics will come, but now here we will go to the programme again IGWDP, state we will say Gujarat and then district is all, watershed clusters all, some activities you cannot change these much. So, we can see here all activities are coming so let us keep it all and then sub activities.

You can start date and period to see the data which is available. Again this data is different than a monitoring and evaluation data that we are discussing above. Let us see period is fine you can select the year say 2012 Jan say 1 today date is 22nd March so let us say view. So, one thing which is interesting here we can actually do the current scenario. So, I am teaching now in 2023 for one reason is that I do not want to show the off dated data.

Aand you can see that 379 points have been formed, you click go to the mouse here and then zoom in to one of these locations to look at the data. So, the data is interesting if you look at it you can click that on it, it will have an image of the project Bhuvan NABARD and then the name Bhuvan NABARDFDC training was given, the date of the training, what will they do, start date, end date amount sanctioned and etcetera.

So, what will they do? We can see here is good training and some pictures taken with the farmers and that is it the data you could see approved and then there is a person who approves it. So, I have spoken to NABARD team and they say very clearly that not all can prove this only the managers and the senior most people will look into this database and then approve it. Once they approve it comes on line for citizens to see.

So, engineers constantly update the data and you can see that the project ended in 2018, approved on 2020. So, two years approximately they will use it for checking the data and then approving the data, uploading the data etcetera. So, it does take little bit time and then we can close this. We can go to another project area let us say Dahod. I am going to show Dahod in a very particular sense because I work in Dahod with couple of NGOs.

And I know they also are doing some very good work. So, this is not to compare the work, but to take a region where you have NGOs working and also people working on the dataset. So, this is the same organization I also work NM Sadguru Water and Development Foundation as a visiting scientist for some time and you could see that they are NGOs partner, what do they want to do, they want to do on whether is agro advisory.

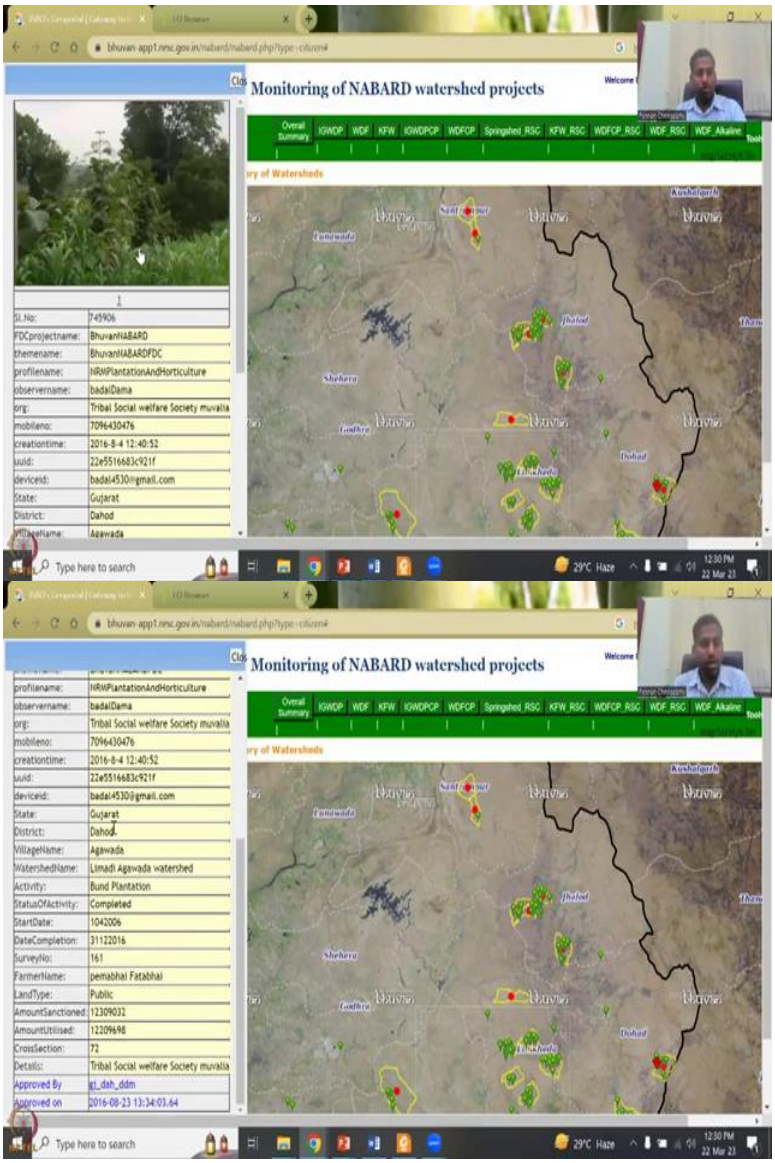
So, based on the climate they will give advisory to the farmers agro decisions can be taken. So, image has not been come up and now it has come up. So, you can click on that image to make it big and you could see that the farmers are working, the NGO people are working and then you can zoom in and zoom out. So, what was it used for? It was workshop on good construction practice.

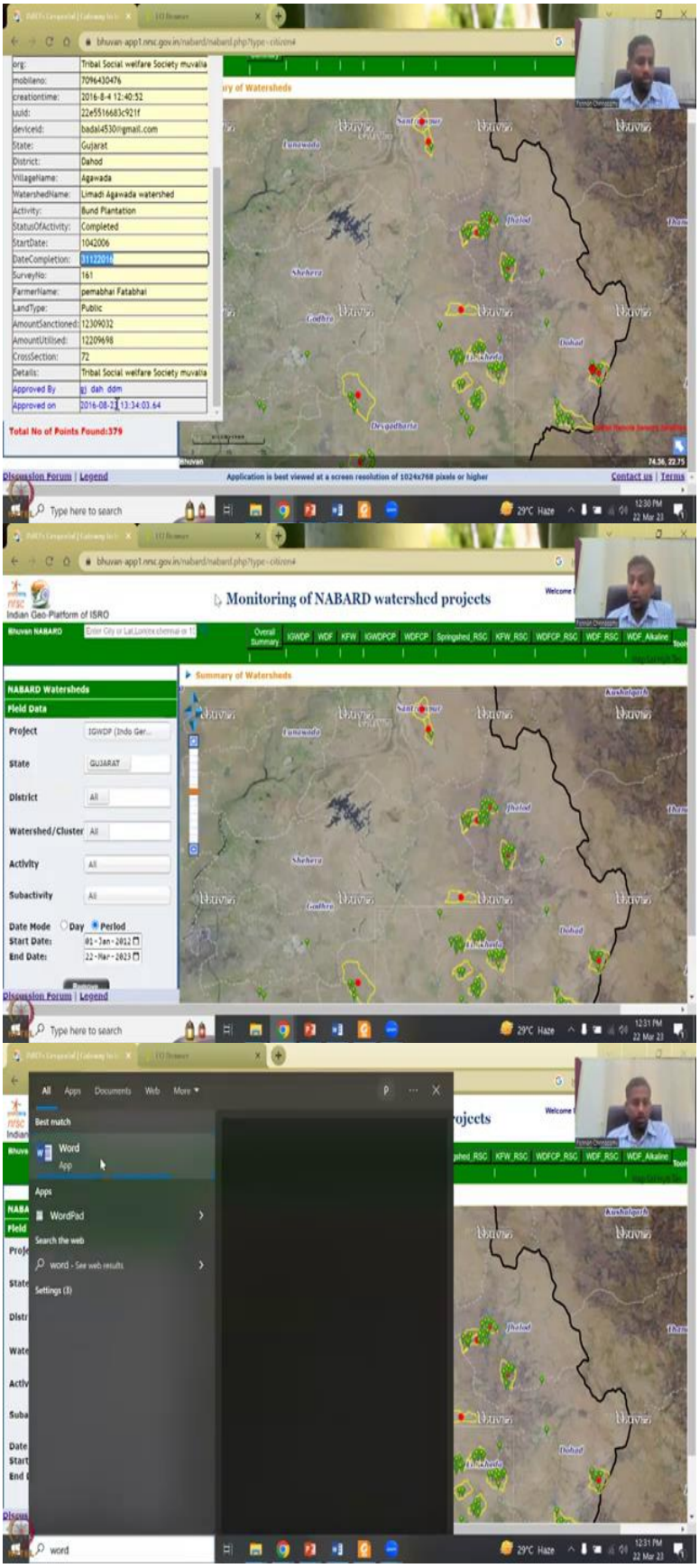
Multiple workshops are there so we do not know which banner to trust and some data is also there, but it looks like a stakeholder workshop. It is not a fully data that you can export. So, this is the concern as I said we have, we do not have a data that we can export. So, it happens the screen is not visible so let me share the screen. So, if you click on this website this photograph it will come up.

So, I am going to do it again just click on this photo you can see the photo come up and you can zoom in and read what they do and it is really good to see some data etcetera. It looks like a stakeholder workshop the first image does not come up maybe some issues just click to zoom and let us see it comes up it is not found. So, this is some dataset on a workshop, but what is on the ground what does it mean on the ground we do not know.

So, focus on this name NM Sadguru Foundation. As I said I have also worked there we will take a paper that we published with them collaboratively on the issues and concerns and how we address the amazing satellites and emergency later. So, this is how we can find the points and then I use it for our research. So, it is a date and based on the date you can have different points.

(Refer Slide Time: 34:24)

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StatusOfActivity: Completed
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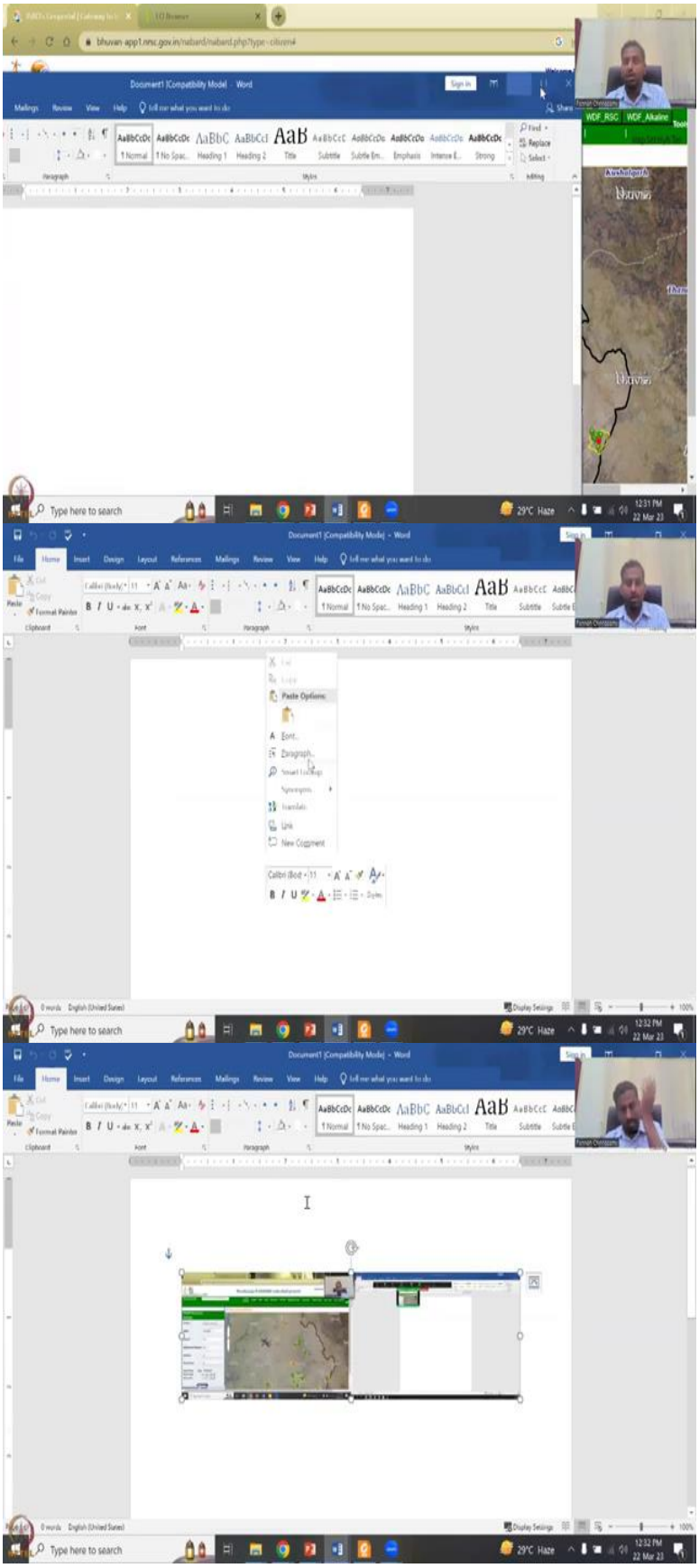
DateCompletion: 31122016
SurveyNo: 161
FarmerName: pemabhai Fatabhai
LandType: Public
AmountSanctioned: 1230932
AmountUtilised: 12209698
CrossSection: 72
Details: Tribal Social welfare Society muvalia
Approved By gj dah ddm
Approved on 2016-08-22 13:34:03.64
Total No of Points Found:379
Monitoring of NABARD watershed projects
Indian Geo-Platform of ISRO
Summary of Watersheds
NABARD Watersheds
Field Data
Project
State
District
Watershed/Cluster
Activity
Subactivity
Date Mode
Start Date:
End Date:
Discussion Forum | Legend
Application is best viewed at a screen resolution of 1024x768 pixels or higher
Contact us | Terms
Type here to search
29°C Haze
12:30 PM
22 Mar 23
12:31 PM
All
Apps
Documents
Web
More
Best match
Word
App
WordPad
Search the web
word - See web results
Settings (3)
word


Document1 [Compatibility Mode] - Word
WDF_RSC
WDF_Alkaline
Bhuvan
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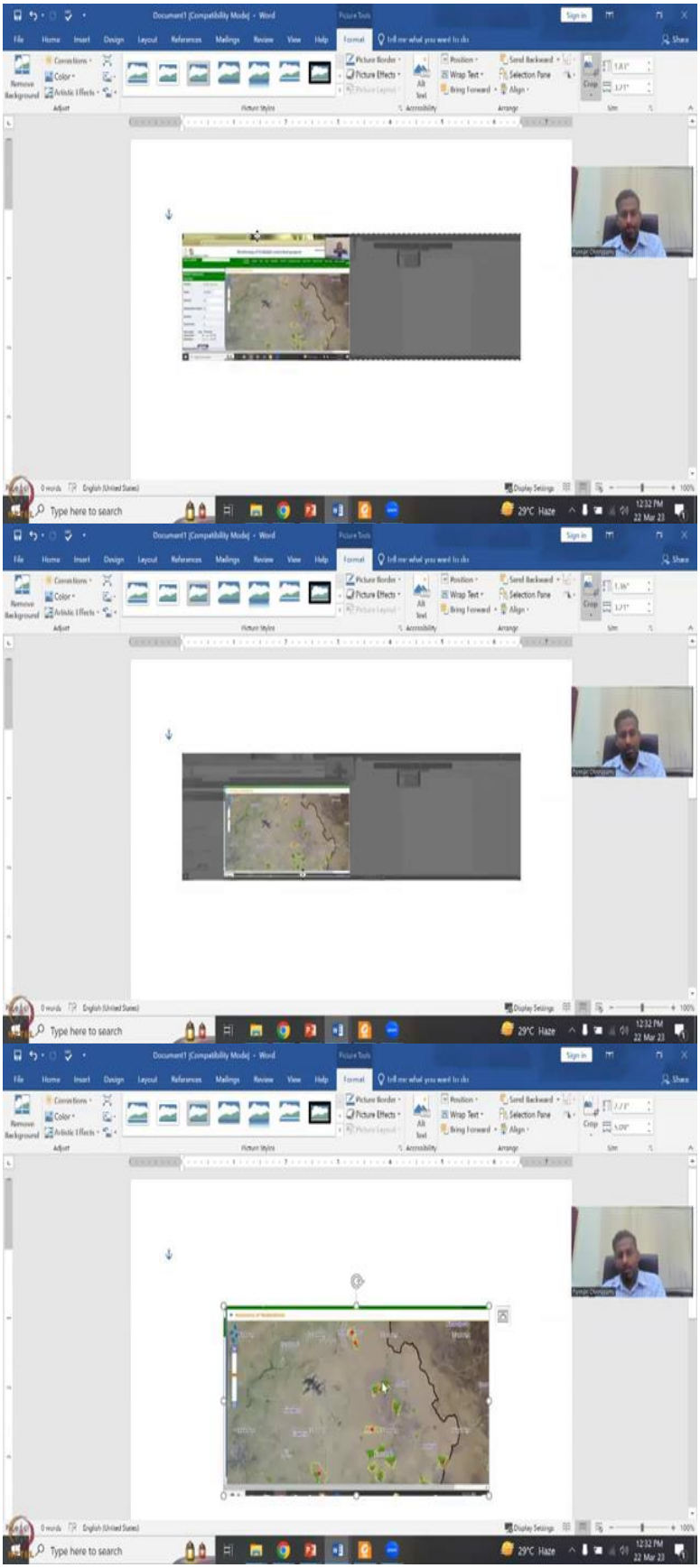
22 Mar 23
Paste Options:
12:32 PM
22 Mar 23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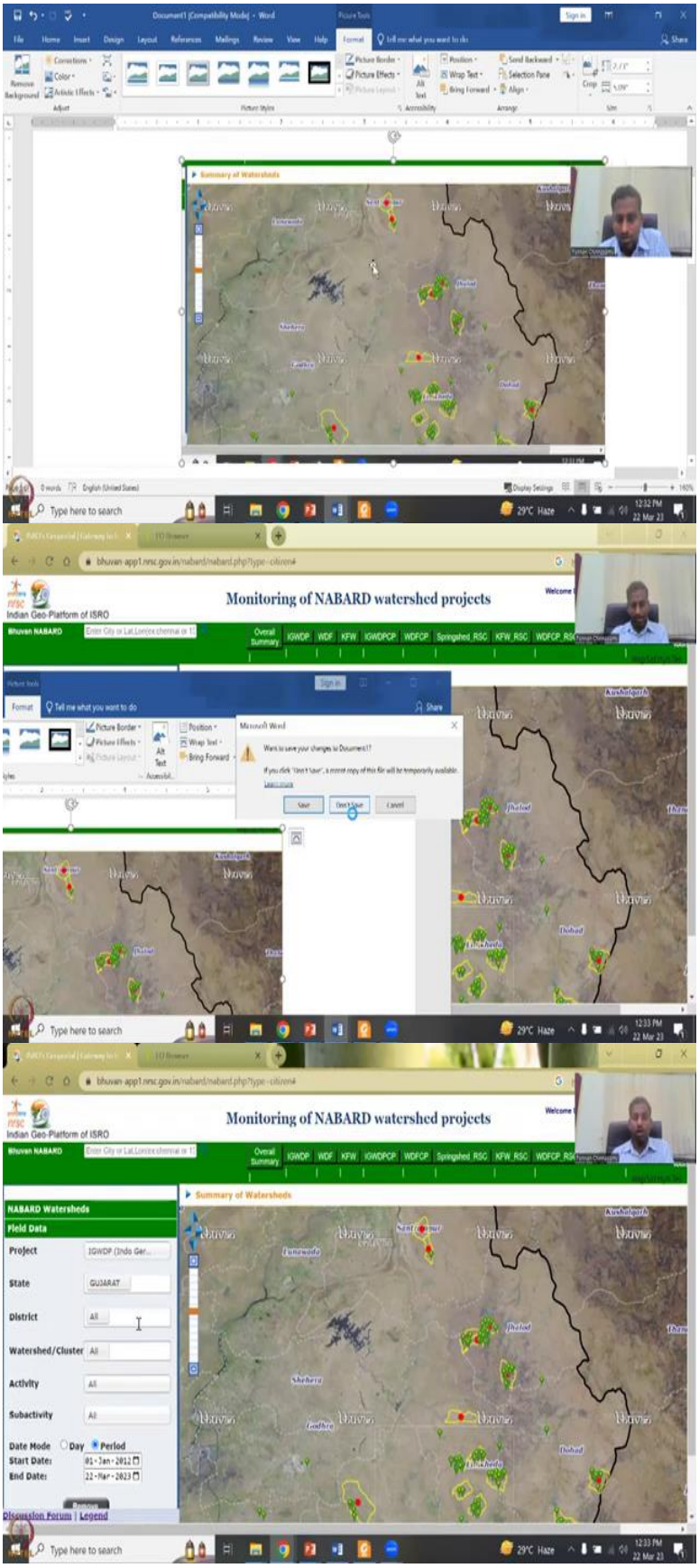
Monitoring of NABARD watershed projects
Indian Geo-Platform of ISRO
Bhuvan NABARD
Summary of Watersheds
NABARD Watersheds
Field Data
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Watershed/Cluster
Activity
Subactivity
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End Date:
Discussion Forum | Legend
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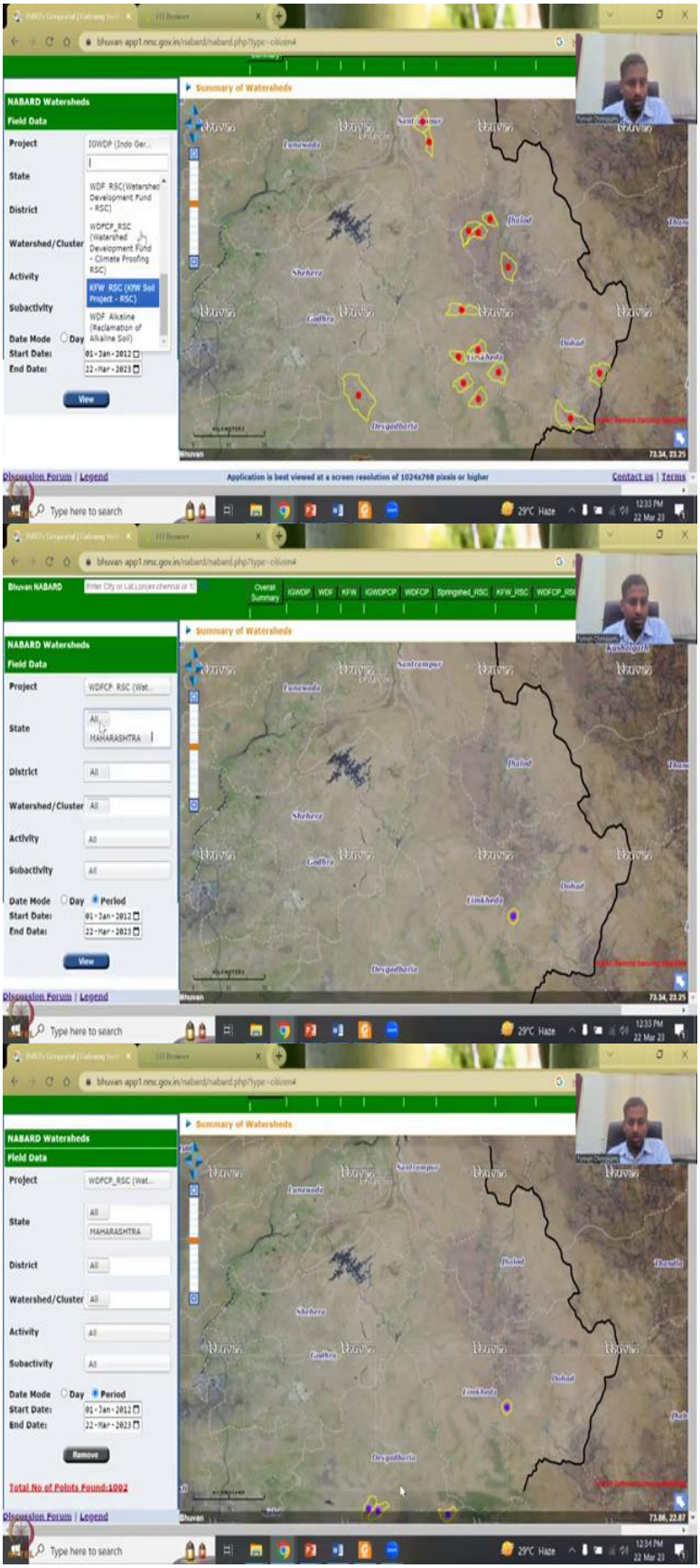
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NABARD Watersheds
Field Data
Project
IGWDP (Indo Ger...
State
WDF_RSC(Watershed Development Fund - RSC)
WDFCP_RSC (Watershed Development Fund - Climate Proofing RSC)
KFW_RSC (KfW Soil Project - RSC)
WDF_Alkaline (Reclamation of Alkaline Soil)
District
Watershed/Cluster
Activity
Subactivity
Date Mode
Day
Start Date:
01-Jan-2012
End Date:
22-Mar-2023
View
Summary of Watersheds
Discussion Forum | Legend
Application is best viewed at a screen resolution of 1024x768 pixels or higher
Contact us | Terms
Type here to search
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22 Mar 23
Bhuvan NABARD
Overal Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_IRSC
WDFCP_RSC
WDFCP_RSC (Wat...
MAHARASHTRA
Period
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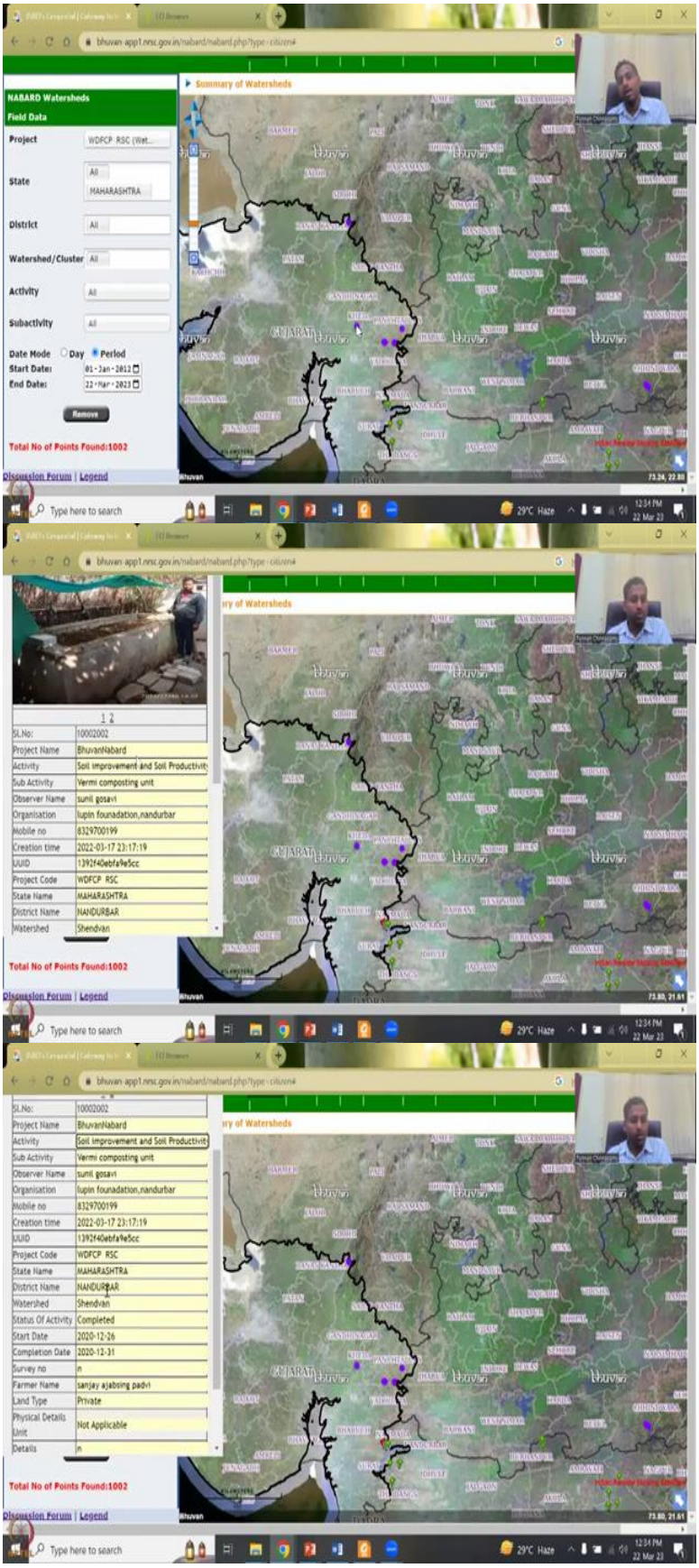
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NABARD Watersheds
Field Data
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State
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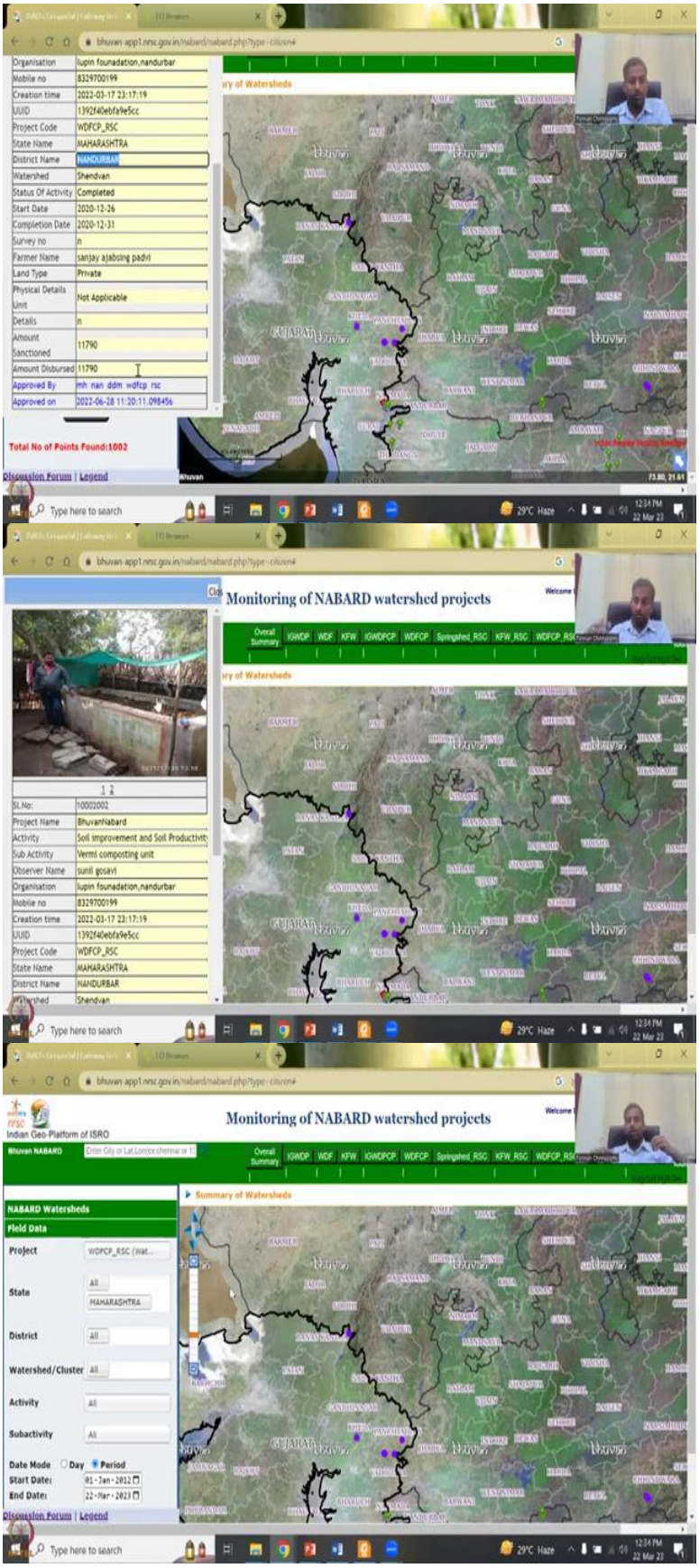
MAHARASHTRA
District
All
Watershed/Cluster
All
Activity
All
Subactivity
All
Date Mode
Day
Period
Start Date:
01-Jan-2012
End Date:
22-Mar-2023
Remove
Total No of Points Found:1002
Discussion Forum | Legend
Summary of Watersheds
Type here to search
29°C Haze
12:34 PM
22 Mar 23
1 2
Sl.No: 10002002
Project Name BhuvanNabard
Activity Soil improvement and Soil Productivity
Sub Activity Vermi composting unit
Observer Name sunil gosavi
Organisation lupin founadation,nandurbar
Mobile no 8329700199
Creation time 2022-03-17 23:17:19
UUID 1392f40ebfa9e5cc
Project Code WDFCP_RSC
State Name MAHARASHTRA
District Name NANDURBAR
Watershed Shendvan
Status Of Activity Completed
Start Date 2020-12-26
Completion Date 2020-12-31
Survey no n
Farmer Name sanjay ajabsing padvi
Land Type Private
Physical Details Unit Not Applicable
Details n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Mobile no 8329700199
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Project Code WDFCP_RSC
State Name MAHARASHTRA
District Name NANDURBAR
Watershed Shendvan
Status Of Activity Completed
Start Date 2020-12-26
Completion Date 2020-12-31
Survey no n
Farmer Name sanjay ajabsing padvi
Land Type Private
Physical Details Unit Not Applicable
Details n
Amount Sanctioned 11790
Amount Disbursed 11790
Approved By mh nan ddm wdfcp rsc
Approved on 2022-06-28 11:20:11.098456
Total No of Points Found:1002
Discussion Forum | Legend
Monitoring of NABARD watershed projects
Overall Summary
IGWDP
WDF
KFW
IGWDPCP
WDFCP
Springshed_RSC
KFW_RSC
SL.No: 10002002
Project Name BhuvanNabard
Activity Soil Improvement and Soil Productivity
Sub Activity Vermi composting unit
Observer Name sunil gosavi
Organisation lupin founadation,nandurbar
Mobile no 8329700199
Creation time 2022-03-17 23:17:19
UUID 139214Debfa9e5cc
Project Code WDFCP_RSC
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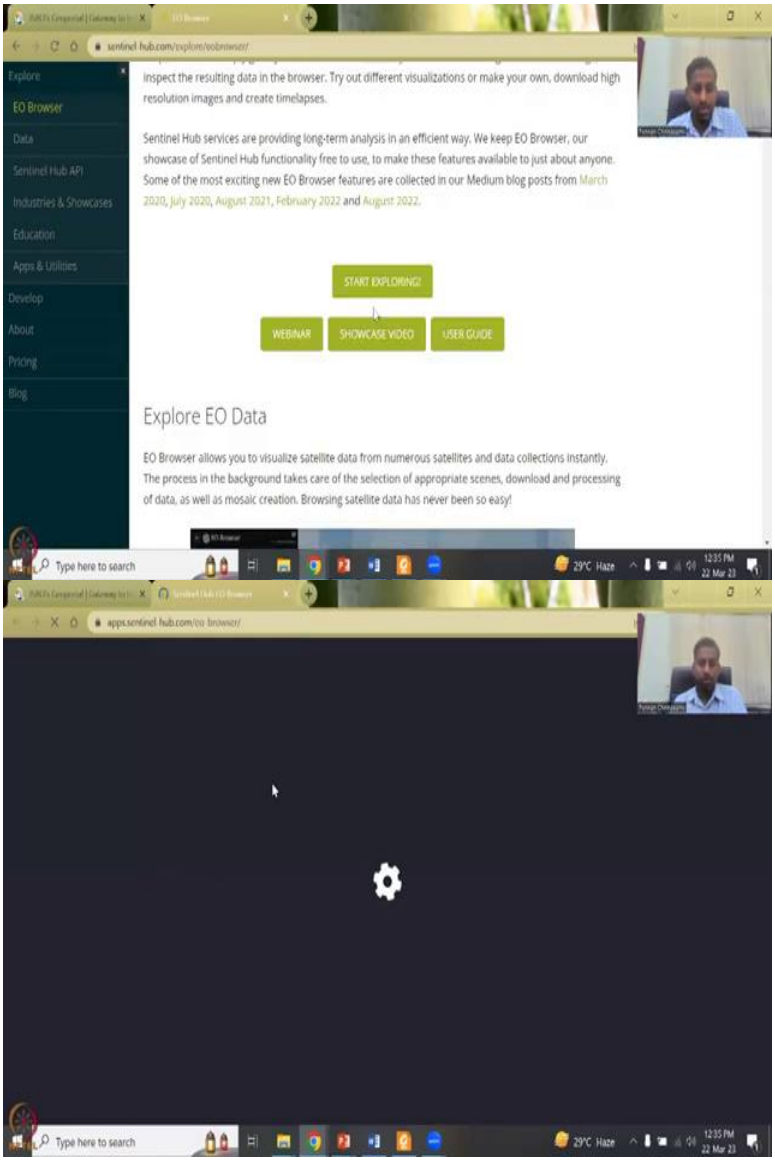
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Data
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Education
Apps & Utilities
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Pricing
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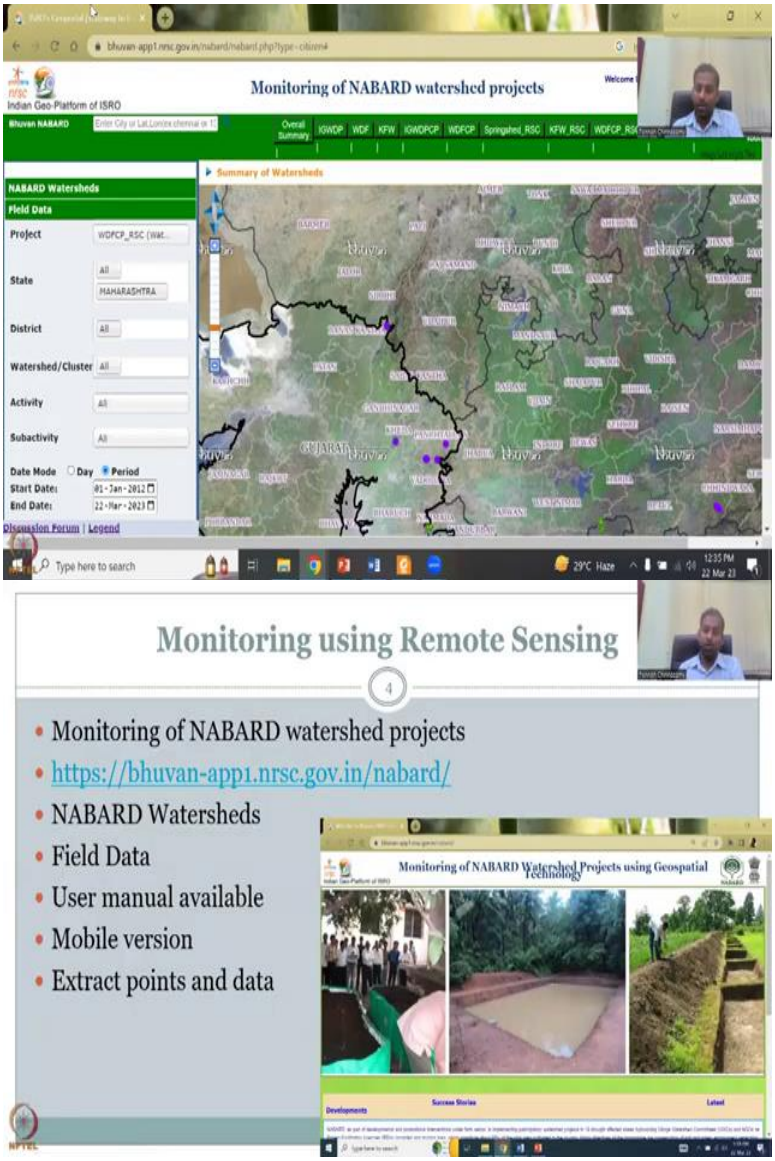
apps.sentinel-hub.com/eo-browser/
Type here to search
29°C Haze
12:35 PM
22 Mar 23



So, different latents are here this is one thing at least you can see NRM plantation in horticulture. So, you see some plantation and fruits that have been growing here as per their comment. It is Gujarat Dahod who the farmer name is there. Some numbers and links to do the things are there. So, you can started the completed date is 2016 and this has been approved on the 23rd or 2016.

So, giving the project a collect of the data it seems because the project ended in 2016, but the data was collected almost on their midnight so that is also good and so this kind of data you can extract. So, locations you can take and let us check. See the location might be hard to take, but I have already taught you how to Geo reference. So, take this image like this you can copy, paste or I will just show you the trick.

You can use a word document. So, let the word document come up and you can take a print screen. So, in the print screen you can make a small image that you can save as a paper. So, I am just going to click print screen and then this is what I taught my students also because the boundaries is very hard to connect and so on a word document just control paste your image will come.

And all you have to do is format then crop image, use the crop tool, take the image I use any paint software anything you want. So, here we have an image you can save this as picture, you can click, right click, save as a picture and then import the picture on GIS for ground roofing and Geo referencing. So, once you Geo reference what happens is now you have the locations.

These locations can be extracted and you see those boundaries, those boundaries can also be extracted. So, this is how I have taught my students when there is no data, do not complain there is no data, but start collecting data. So, with this I will stop the discussion on this website. As you see there is not much data you have for evaluation, monitoring of these locations, where the locations are is present, not all is covered.

So, slowly maybe they are going to put it up in fact the IIT Bombay has also been approached by them to see how we can robustly make these data basis because the computer science department here is very, very knowledgeable of these things and see how to collaborate with NABARD on creating these websites. So, it is pretty good to see and then you can remove it as you can see other program similarly quickly we can do a soil watershed development programme.

Get it update all states, how many states are there more states are there let us say Maharashtra you cannot take it out so let us say Maharashtra is fine. All same period just search for it and these points are coming up. So, these are the points where a different schemes are working on the same scheme, but different scheme. So, you click on this and see nothing much is coming. So, you can go zoom out to see any other data if it is working.

So, now all datasets have pop out. So, mainly this one has it all the green ones have a pop work. So, this is Bhuvan NABARD, soil improvement, soil what is the productivity in Ahmadabad pretty progressive district and it has been approved very recently and 2020 was a project. So, they are basically billing on the composed it looks like to improve a soil fertility and stuff.

So, I am happy to showcase this which is a dashboard which has GIS and one layer behind, but the idea is to extract these information and use it for your work. I will show you here also as you have seen in the previous. You can also put the location there and then see now we have 2009 the program started before and after 2009 what happened. So, all these can be directly maneuvered through this Sentinel Hub.

I have already shown this how to search for a location and then do a compare between images. So, you do a NDVI or NDWI before and after and then we will do this. So, I will show this in the next class because of time let me stop here but please go and refresh your notes on the materials that were shared in class. Again monitoring is there, evaluation is not there so how do you evaluate a program. So, that is what we will be addressing in this week. I will see you in the next class. Thank you.