

**LOYOLA COLLEGE OF SOCIAL
SCIENCES
Department of Disaster Management**

**REPORT OF CERTIFICATE COURSE ON ‘LAND USE AND
DISASTER RISK REDUCTION’**

(14th to 19th October 2021)

SECOND YEAR MSW DM (2020-22)

Introduction

DAY 1, 14th October 2021

First day of the six-day certificate course on ‘Land use and disaster risk’ commenced on 14th October 2021.

The introductory session commenced at 9.30 am and Dr. Jyothi Krishnan (HOD, Department of Disaster Management) introduced the broad objectives of the course. In order to assess the knowledge level of the students on this topic an assessment test was conducted. Following this Dr. Jyothi Krishnan welcomed the resource persons Dr. Abey George (Associate Professor KILA) and Mr. Sanjeev (Founder Member of Environment Protection Council).

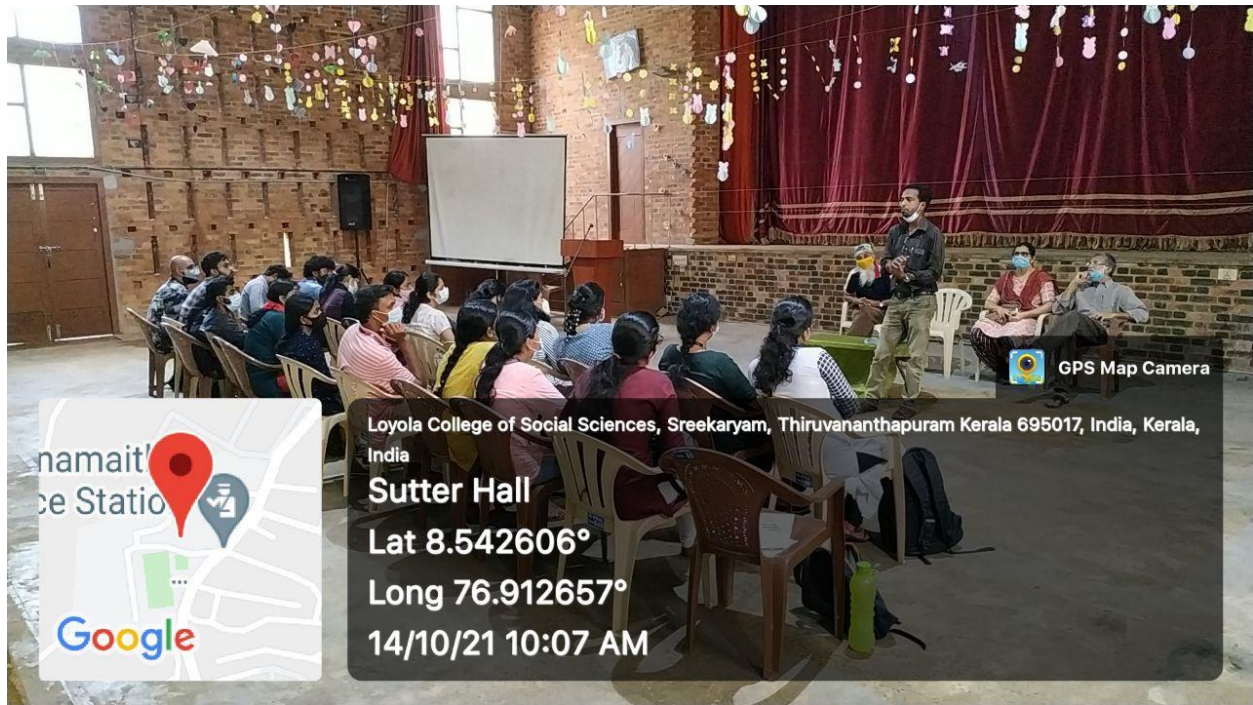


Photo 1: Inaugural Session 14.10.21

Dr Abey spoke about the importance of understanding the land and to be sensitive to changes that take place on the land. He introduced the broad framework that would guide the activities for the coming days.

Field Visit:

On the first day, by way of introducing the trainees to the hills that drain into the Aakulam lake, the trainees were taken to the Kattela hills which is situated 51m above from the sea level. Kattela is one of the major hilly regions that drains water into the Aakkulam lake. Dr. Abey and Mr. Sanjeev explained about the geography of the area, the hills and valleys, the importance of the wetlands in the valley bottom, slope and drainage. Kattela hills lies between Aatipara and Cheruvaikkal villages. The Kattela hills are laterite hills and a major portion of the hill was being mined developmental activities. The valleys consisted of paddy lands, which were being filled with soil mined from the hills and constructions were

coming up in the paddy lands. The trainees observed how the natural flow of the water was being blocked due to such interventions. In that area land use changes are visible. The mining of the sand from the adjoining hill slope and the manner in which it destabilised the slope making the area vulnerable to future landslips was observed. Trainees were introduced to Mangium and Acacia plantations in the area. It was reported that seeds of the acacia and mangium were thrown onto the land surrounding the wetlands. The growing trees would suck up water and thereby hasten the conversion of the wetlands to dryland. It was reported that this was being undertaken by those engaged in land conversion in the area.

Students were asked to map the area while sitting atop the Kattela hills. While many were doing this for the first time, they were gradually able to make a preliminary attempt at mapping the land, vegetation and slope. Students were asked to climb up and down and to be mindful of the changing slope and terrain. The day was hot and sunny, and brief interludes under the shade of trees provided time for reflection and discussion as well.



Photo 2: Valley viewed from Kattela hills

DAY 2, 15 October 2021

The day commenced at 9.30 am with field work. Trainees were taken to yet another high point in the catchment of the Aakulam lake. The trainees were taken to the sloping land above the Cheruvakkal village office. 30

ms above sea level. The highest point on this slope is now the second campus of the Rajiv Gandhi Centre for Biotechnology. Two experts from the area joined the team during the field visit, viz. Dr. Ram Kumar (Rtd. Veterinary Surgeon) and Mr Chitrabanu whose family has been living in this area for several generations. Dr Ramkumar spoke about the field of disaster risk reduction, and emphasized the importance of preventing rather than managing disasters.

Rajiv Gandhi Centre for Biotechnology is situated 30 meters above from the sea level, and is located on the north eastern side of the Aakkulam lake, adjacent to the campus of the Indian Air Command. The campus consists of 20 acres of land which was de-vegetated and the hills were flattened for construction purpose. The high rise buildings on this campus are situated in the air funnel zone, due to which the top most floor was demolished due to the violation of building codes, but was rebuilt again. . Trainees also observed the artificial lake created following clay mining in that area and the gabion structures that protected the sides of the lake. The use of gabion structures as soil and water conservation measures was discussed, as well as its cost implications.

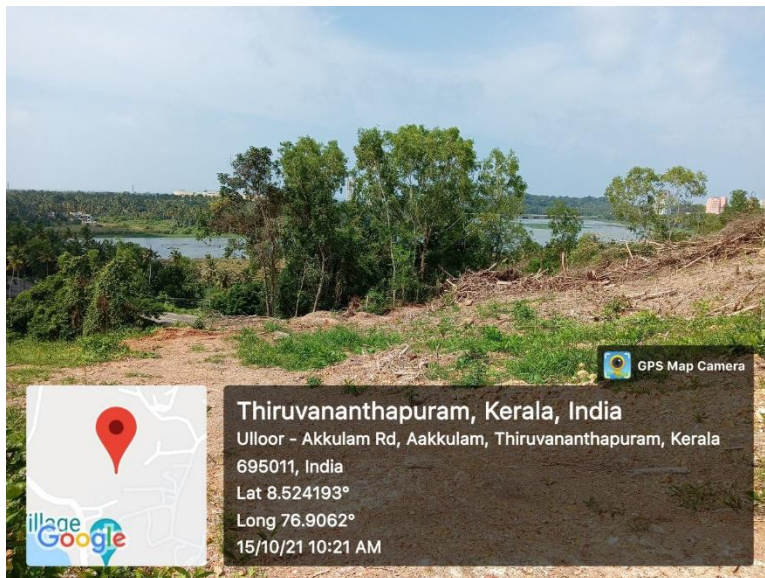


Photo 3: Aakkulam lake viewed from RGBT campus

After the visit trainees went back to college and had a session with Dr Ramkumar and Chitra Banu sir. He is a resident of that area and had knowledge about the history of the lake and changes that have taken place over the past decades.



Photo 4: Interaction with Dr Ramkumar

The afternoon session commenced with a one hour session with Dr Abey George, where he explained stream orders to the students. The difference between first, second and third order streams was explained.

This was followed by a field visit. to the Aakkulam lake region. Issues related to encroachment by private and government agencies was observed and discussed.

Issues related to land use regulations and coastal zone regulations was discussed.. The issue of pollution was also discussed, including the sewage, hospital and saloon waste that flowed into the lake through the Aamazhinjan tod.



Photo 6: Waste dumped in the lake bed

The field session ended by 5.30 pm.

DAY 3, 16 October 2021

The morning session began at 9.30 am and was a classroom session handled by Dr. Abey. The session focussed on mapping, learning to use google maps and navigating google maps. The group was also introduced to the topographical specificities of Kerala and the distinct importance of the Western Ghats.



Photo 7: Orientation to Maps

Concepts related to first and second order streams, ridge lines and watershed was re-emphasized. The issue of reductions in the size of

wetlands was discussed. The need to view wetlands as ecological entities was also discussed.

The afternoon session was a field session. Trainees were taken to the areas around the Aakulam lake. Before reaching down to the lake bed, trainees were taken to a few vantage points that allowed them to observe the slopes

that drain down into the lake from the Kottamughal junction.



GPS Map Camera



Thiruvananthapuram, Kerala, India

Ulloor - Akkulam Rd, Akkulam, Thiruvananthapuram,

Kerala 695011, India

Lat 8.522203°

Long 76.911815°

16/10/21 02:46 PM

Photo 8: Understanding the slope

The manner in which roads and other constructions cut into the slopes was observed and the manner in which surface flow gets diverted was also discussed. The older campuses located along the lake and the new emerging ones were also discussed. The manner in which survey stones were placed all around the fresh constructions was also observed. The field visit ended by 5:30 pm.

DAY 4, 17 October 2021

Day 4 consisted of two field sessions.

The morning session began at 9.30 am. The morning session began with

On the fourth day of the programme trainees visited the Kottaram Moola which is a small hill that slopes down from the campus of the Rajiv Gandhi Centre for Biotechnology. As a follow up of the earlier class room discussions on stream orders, the trainees were shown the first and second order streams flowing through this area and trainees were able to identify the same. The concept of the watershed was also elucidated with field examples.

The manner in which coastal zone regulations are violated through gradual encroachment of the lake bed was discussed with field examples related to a newly constructed petrol pump and a turf. The cemented pathways around the lake as a part of tourism promotion was also a case in point.



Photo 9: Cemented pathways around the lake

The final field visit was to the Veli beach. Prior to this, the group visited a few more locations in the upper parts of the catchment. They also travelled through the valley bottom which they had viewed atop the Kattella hills on the first day. This gave an important insight into the need for understanding slope and drainage, especially the need to view hills and valleys from different vantage points.

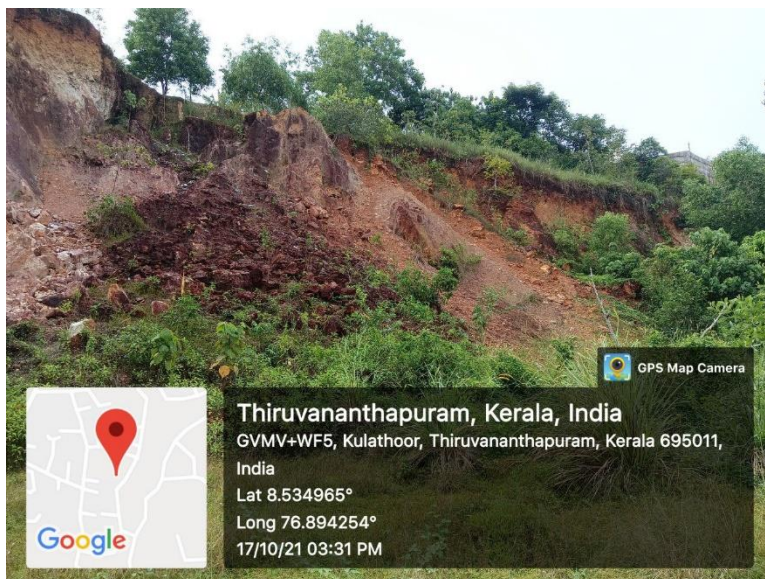


Photo 10: Destablised slopes

The final field visit was to the Veli Aakulam backwaters. After having traversed through the undulating terrain of the hills that drain into the Aakulam lake, the group visited the backwaters. The dynamism of the pozhi and the earlier traditional practices of breaking the pozhi and and present day government initiated measures were discussed.

Discussions with the life guards at the beach who come from the fishing community provided information about the menace of pollution in the sea. They also spoke of the gradual reduction in the beach area with the ingress of the seawaters.

DAY 5, 18 October 2021

The day long session from 10 am to 6 pm was devoted to preparation of group wise presentations. The 22 member group was divided into six groups.

Each group was assigned a specific location covered during the field visits.

Dr. Abey George gave instructions on the how we use google map, google earth, and geo tracker while preparing the presentation. Mr. Sanjeev also provided further clarifications regardin specific issues and clarified doubts. Each group was also briefed as to how they are to present the issues concerning their respective areas, along with presentation of the maps.

The day ended with a feedback session. Trainees shared their experiences of the past five days along with their understanding from the field. Trainees also reflected upon their understanding, observations and about the growth in their their level of understanding about issues related to land

use and land use change, about the importance of wetlands and about wetland conservation as a disaster risk reduction measure.

Some of the comments mentioned in the feedback session was as follows-

'We have begun to look at the slope and the land. We have begun to see the land'

'We understand that environmental protection is a huge task, it is much more than just prevention of pollution'

'The field visits made a big difference, as we were able to see the implications of land use change'

'Earlier when I used to sit in a car travelled uphill, I was aware of the need to change gears. Now when I travel uphill, I think of the slope of the land'

'The regular field visits, and walking through different terrain, I realise that the slope, vegetation and drainage are all inter connected'

The Dr. Abey, Dr. Jyothi, Dr. Joice and Mr. Sanjeev listened to the feedback. The session concluded by 6 pm.

DAY 6, 19 October 2021

This was the last day of the certificate course on 'Land use and Disaster Risk Reduction'. The final preparation for the presentations commenced

at 10 am. The trainees presented their trial presentations to the department faculty. Comments and suggestions were incorporated.

Final presentation:

The final presentation commenced by 3.30 pm. The chief guest was Mr. Anu S Nair (Deputy Collector)

Dr. Jyothi Krishnan welcomed the chief guest Mr Anu S Nair, Principal Dr Saji P Jacob and resource persons Dr Abey George and Mr Sanjeev. Dr Krishnan introduced the Chief Guest to the gathering.

The students made group wise presentations with power points and maps.



Photo 11: Final Presentations before Mr Anu S Nair and Principal



Photo 12: Students' presentations

Following the presentation, Dr Saji P Jacob, made observations about the presentations and remarked upon his own observations about the Aaakulam lake. Dr Jacob appreciated the presentations made by the students and also emphasized on the need to integrate both social and natural sciences in such enquiries which traversed the domains of social sciences, disaster studies, geology and geography.

This was followed by a discussion with the chief guest Shri Anu S Nair. Shri Anu spoke of his childhood memories of Aakulam lake as well as his experiences as an administrator. He spoke of challenges in implementing land use regulations in the state as there is no land use zoning. He also spoke about the lack of clarity in classifying ponds, streams and wetlands. While laws to prevent wetland conversions exist, the policy classifications that enable implementation of these laws is missing. There is also a need

for a wetland atlas in the state so that we know of wetlands and their conversion.

Ms Aparna, Second Year MSW DM student proposed the vote of thanks.

LEARNING OUTCOMES

Through the six-day certificate course on ‘Land use and Disaster risk reduction’ trainees acquired learning both professional and personal.

- Trainees acquired knowledge about the land and slope, watershed, ridge lines, stream order, gauging the slope, and also the use of different type of mapping methods.
- Trainees got a hands-on experience in observing land use changes, on the importance of ecological land use patterns. They were able to assess the impact of encroachments into the wetlands, by taking the Aakulam as a case.
- Trainees learned the importance of proper management, monitoring and restrictions on the use of natural resources and role of government in doing so.

EVALUATION

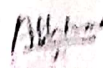










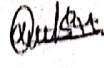
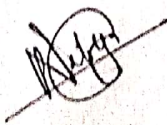
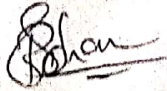
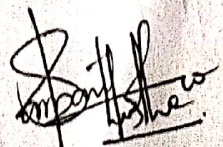
The details of the feedback session have been detailed in earlier sections. In addition to the group presentations, trainees were also asked to submit written reflections about the course.

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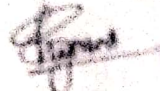






Thursday.

1.	Abhirami S. Sharma	Abhirami
2.	Akshara Sobhanan	AK
3.	Aparna R.	Aparna R.
4.	Ashin P.J	Ashin
5.	Axun Anil	Axun
6.	Bilbilal P Saji	Bilbilal
7.	Brigitte Maria Thomas	Brigitte
8.	Delna John	Delna
9.	Ebin Thomas Babu	Ebin
10.	Fadhima N	Fadhima
11.	Gopika Rajendran	Gopika
12.	Hima SH	Hima
13.	Jilsha A.B	Jilsha
14.	Nayana Scaria	Nayana
15.	Neleena Scaria	Neleena
16.	Nitya Nibu	Nitya
17.	Pravin S. kumar	Pravin
18.	Roshan John Netto	Roshan
19.	Sam Sandesh Mathew	Sam Mathew
20.	Shilpa S. Ajan	Shilpa
21.	Shyama A.	Shyama
22.	Sneha Mathew	Sneha

16/10/2021 [Friday]

Roll No.	Name	Sign
1.	Abhirami S	
2.	Akshara	
3.	Aparna	
4.	Ashin	
5.	Bilbilal	
6.	Brijith	
7.	Ebun	
8.	Ethunia	
9.	Gopika	
10.	Jibha	
11.	Kavya	
12.	Kelena	
13.	Nitya	
14.	Roshan	
15.	Sam	

15/10/21

Roll no.	Name	Sign.
16.	Shyama	
17.	Shilpa	
18.	Anushka	
19.	Arun	
20.	Deva	
21.	Homa	
22.	Priya	

16.10.21

21
Friday

Name

Signature

	Name	Signature
1.	Abhirami S	<u>Abhirami</u>
2.	Akhana	<u>Akhana</u>
3.	Aparna	<u>Aparna</u>
4.	Ashia	<u>Ashia</u>
5.	Bilalal Saji	<u>Bilalal</u>
6.	Bijitha	<u>Bijitha</u>
7.	Ebin	<u>Ebin</u>
8.	Fatima	<u>Fatima</u>
9.	Gopika	<u>Gopika</u>
10.	Jilsha	<u>Jilsha</u>
11.	Nayana	<u>Nayana</u>
12.	Nelceena	<u>Nelceena</u>
13.	Nitya	<u>Nitya</u>
14.	Rochan	<u>Rochan</u>
15.	Sara	<u>Sara</u>
16.	Shyama	<u>Shyama</u>
17.	Shilu	<u>Shilu</u>

16.10.21

18. Sacha

Sacha

19. Anna Anil

Anna Anil

Anna Anil

20. Delia

Delia

21. Nina

Nina

22. Peijia

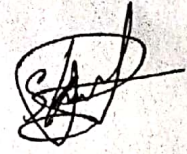
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Sunday

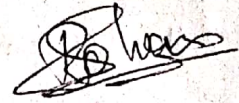
- | Name | Signature |
|-------------------------|-----------------------------|
| 1. Abhirami | <u>Abhirami</u> |
| 2. Akshara Sobhanan | <u>AK</u> |
| 3. Aparna R | <u>Aparna R</u> |
| 4. Ashia P J | <u>Ashia P J</u> |
| 5. Anu Anil | <u>Anu Anil</u> |
| 6. Bilal P. Saji | <u>Bilal P. Saji</u> |
| 7. Brijith Maria Thomas | <u>Brijith Maria Thomas</u> |
| 8. Debra John | <u>Debra John</u> |
| 9. Ebin Thomas Babu | <u>Ebin Thomas Babu</u> |
| 10. Fathima N | <u>Fathima N</u> |
| 11. Gopika Rajendran | <u>Gopika Rajendran</u> |
| 12. Ilima SH | <u>Ilima SH</u> |
| 13. Zilcha AB | <u>Zilcha AB</u> |
| 14. Nayana Scaria | <u>Nayana Scaria</u> |
| 15. Neelina Scaria | <u>Neelina Scaria</u> |
| 16. Nitya Nibu | <u>Nitya Nibu</u> |

17.10.21

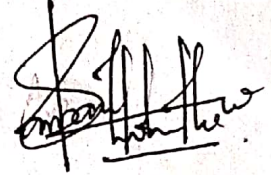
17. Prija S Kumar



18. Roshan John Netto



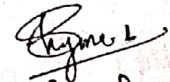
19. Sam Santosh Mathew



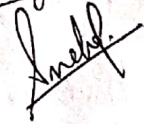
20. Shilu S Ajai



21. Shyama A



22. Sneha Mathew



18.10.2021.

Monday

Roll No.	Name	Signature
1.	Abhirami	Abhirami
2.	Akshara Sobhanan	AK
3.	Aparna R.	aparna
4.	Ashio P J	Ashio
5.	Arun Anil	Arun
6.	Bilbilal P. Saji	Bilbilal
7.	Brijth Maria Thomas	Brijth
8.	Delma John.	Delma
9.	Ebin Thomas Babu	Ebin
10.	Fathima N	Fathima
11.	Gopika Rajendran	Gopika
12.	Hima S H	Hima
13.	Jilsha A B	Jilsha
14.	Nayana Scaria	Nayana

18.10.21

15 Alaloma Scaria

~~Alaloma~~

16 Nilija Alibu

Nilija

17 Poojin S Kumae

~~Poojin~~

18 Roshan John Netto

Roshan

19 Sam Santhosh Mathew

Sam Santhosh Mathew

20 Shilu S Ajai

Shilu S



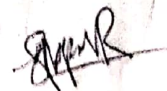
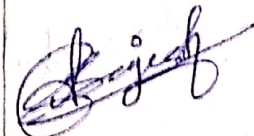








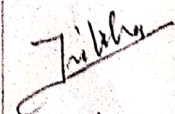
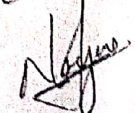
21 Shyama A

Shyama

22 Sneha Mathew.

Sneha

19.10.2021

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1	Abhirami S	
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13	Jibha AB	
14	Nayana Scaria	

19.10.21

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| 15 | Aleena Scaria | Signature |
| 16 | Alitja Alibu | Signature |
| 17 | Poojin S Kumar | Signature |
| 18 | Roshan John Netto | Signature |
| 19 | Sam Santhosh Mathew | Signature |
| 20 | Shilu S Ajai | Signature |
| 21 | Shyama A | Signature |
| 22 | Sneha Mathew | Signature |