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NIRDPR

CIRDAP - NIRDPR Collaborative International Training Programme on

"Geo-Informatics Applications in Rural Development"

30th March — 04th April 2026

Venue: NIRDPR, Hyderabad, India

Training Report

CIRDAP

Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP)

(An Intergovernmental, Regional & Autonomous Organization)

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CIRDAP-NIRDPR Collaborative International Training Programme on

Geo-informatics Applications in Rural Development

30 March - 4 April 2026

NIRDPR, Hyderabad, India

PROGRAMME REPORT

CIRDAP
May 2026

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ACKNOWLEDGEMENTS

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and
National Institute of Rural Development and Panchayati Raj (NIRDPR) for effectively organising the program.

Dr. P. Chandra Shekara
Director General

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1. About the Programme

The Government of India sponsored the "CIRDAP-NIRDPR International Training Program on Geo-informatic Applications in Rural Development", which was conducted from 30 March to 04 April 2026 at the National Institute of Rural, Development and Panchayati Raj (NIRDPR) campus in Hyderabad,

India. It is the first of the three programmes sponsored by the Government of India for the 2025-26 financial year. The programme was inaugurated on 30 March 2026, bringing together participants from eight CIRDAP Member Countries (CMCs) — Bangladesh, Fiji, India, Lao PDR, Myanmar, Nepal, Sri Lanka, and Vietnam — as well as representatives from CIRDAP and NIRDPR, totalling 17 participants. Copies of the the programme brochure ***(Annexure-I)***, programme schedule ***(Annexure-II)*** and list of participants ***(Annexure-III)*** are provided for reference. The programme emphasized geoinformatics, reflecting a forward-looking approach that recognises the role of spatial technologies in planning, monitoring, and evaluating rural development interventions.

2. About CIRDAP and its activities

The Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP) is an intergovernmental organization established in 1979 with support from FAO and several member countries. It's mission is to promote integrated rural development through training, research, and knowledge sharing. CIRDAP acts as a regional hub, facilitating collaboration among governments, institutions, and communities to address challenges in poverty reduction, sustainable agriculture, and inclusive growth. CIRDAP's activities span multiple domains:

- Training and Capacity Building: Organizing international programmes on rural development themes.
- Research and Policy Advocacy: Conducting studies on poverty alleviation, sustainable agriculture, and governance.
- Networking and Collaboration: Facilitating partnerships among member countries, institutions, and development agencies.
- Knowledge Dissemination: Publishing reports, manuals, and case studies to share best practices.

Through initiatives like this collaborative programme, CIRDAP strengthens regional cooperation and equips practitioners with tools to address rural challenges.

At present, CIRDAP has 15 Member Countries from the Asia-Pacific region, namely Afghanistan, Bangladesh, Fiji, India, Indonesia, Iran, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand & Vietnam.

3. About NIRDPR and it's activities

The National Institute of Rural Development and Panchayati Raj (NIRDPR), located in Hyderabad, India, is an apex institution under the Ministry of Rural Development. It serves as a premier centre for training, research, and consultancy in rural development and decentralised governance. NIRDPR's mission is to build capacities of stakeholders, including government officials, NGOs, and community leaders, to implement rural development programmes effectively. Its activities span training programmes, applied research, policy advocacy, and extension services. The institute develops innovative models for poverty alleviation, livelihood promotion, and participatory governance, which are replicated across the country. Specialized centers within NIRDPR focus on social development, natural resource management, ICT for development, and rural infrastructure. It regularly collaborates with international organizations like CIRDAP to share knowledge and expertise. By integrating academic knowledge with field realities, NIRDPR ensures that rural development strategies are practical, scalable, and sustainable. Its emphasis on Panchayati Raj institutions highlights the importance of grassroots democracy in achieving inclusive growth.

The program enhanced my understanding of GIS applications across sectors such as agriculture, land use planning, and disaster management. Learning how to access free satellite data was particularly valuable for various sectors including agriculture in Sri Lanka. The knowledge of platforms like Bhuvan and Samudra, as well as various geosensing-based websites, which highlighted opportunities for long-term planning and technology integration in Sri Lanka. Field visits to Research and Technology Park (RTP), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and Indian National Centre for Ocean Information Services (INCOIS) provided valuable practical exposure to real-world applications, as well as to the use of advanced technologies and expert knowledge. Overall, this experience has strengthened my capacity to effectively inform and advise senior authorities on the potential of GIS-based solutions in Sri Lanka's agriculture and rural development sectors.

M.U. Jeny Sedera
Development Officer, Ministry of Agriculture, Livestock, Land and Irrigation
Address: No: 80/5, Goviana Mandiraya, Rajamalwattha Road, Battaramulla, Sri Lanka

NIRDPR's activities include:

- **Training Programmes:** Conducting national and international courses on rural development themes.
- **Research:** Undertaking studies on poverty, livelihoods, governance, and technology applications.
- **Consultancy:** Providing technical support to government and development agencies.
- **Field Outreach:** Demonstrating rural technologies through the Rural Technology Park.
- **Knowledge Dissemination:** Publishing journals, manuals, and policy briefs.

NIRDPR's collaboration with CIRDAP reflects its commitment to global knowledge sharing. By hosting this programme, NIRDPR showcased its expertise in geo-informatics applications and its role as a hub for rural development innovation.

The training significantly strengthened my understanding of how geoinformatics can be applied to improve rural development planning and decision-making. I developed practical knowledge in using GIS, remote sensing, and spatial analysis to support areas such as climate resilience, disaster management, and natural resource management. Through the sessions and field exposure, I gained valuable insights into how integrated geospatial systems can enhance service delivery and infrastructure monitoring, especially in geographically dispersed settings like Fiji. The experience also helped me appreciate the importance of stronger institutional coordination, data sharing, and capacity building, and enabled me to develop a clear, practical approach for applying these lessons in my work, particularly through the proposed Geoinformatics Coordination Committee for the Eastern Division of Fiji.

Mr. SIMIONE SOROWALE
Divisional Planning Officer, Office of the Divisional Commissioner Eastern,
Ministry for Rural and Maritime Development & Disaster Management, FIJI

4. Selection Process of Participants

After receiving the official approval and sanction from the Government of India, CIRDAP began the participant selection process. A formal letter along with brochure (Annexure-I) was promptly issued to all CIRDAP member countries, excluding Afghanistan, requesting each to nominate one representative. The communication outlined clear eligibility criteria, submission deadlines, and instructions for forwarding nominations to the central secretariat. By limiting the selection to one participant per country, the process ensured equal representation and fairness across all member states. The letter emphasized the importance of nominating individuals with the necessary qualifications, experience, and commitment to contribute meaningfully to the program's objectives. Once the nominations were submitted, the Programme Director from CIRDAP, Dr Venkatamallu Thadaboina, Programme Officer-Learning, coordinated with all nominated officials from the CIRDAP Member Countries, obtained the required documents, and shared them with the NIRDPR team to make all necessary arrangements for their participation in the training programme. This structured approach guaranteed transparency and reinforced the spirit of collaboration among the member countries. Ultimately, the nomination process laid the foundation for bringing together representatives from all member nations under a unified platform for dialogue and cooperation.

5. Programme Framework

Title of the programme: CIRDAP-NIRDPR Collaborative International Training Programme on Geo-informatics Application in Rural Development

The programme covered diverse themes central to rural development, with a strong emphasis on geo-informatics applications. Sessions explored innovative practices in **agriculture, water resources, forestry, fisheries, and disaster management**, highlighting best practices from across Asia and the Pacific. The use of geo-informatics in rural development was presented as a transformative tool for planning, monitoring, and implementing development initiatives. Participants learned about applications such as Bhuvan, ISRO's geo-portal, which supports decentralized governance and rural planning. The programme also emphasized cross-cutting concerns like **gender equality, environmental sustainability, and community participation**. Field visits reinforced these themes by demonstrating practical applications at institutions such as **ICRISAT** (International Crops Research Institute for the Semi-Arid Tropics) and **INCOIS** (Indian National Centre for Ocean Information Services). By integrating theoretical insights with real-world examples, the programme highlighted the multidimensional nature of rural development. The themes underscored the importance of technology, collaboration, and inclusivity in addressing rural challenges, equipping participants with knowledge to design innovative solutions in their own countries. The programme Schedule is attached in ***Annexure-II.***

The learnings of the training are highly significant for Myanmar's ongoing efforts in integrated rural development. By mastering GIS and remote sensing, we can now improve our spatial planning to ensure that infrastructure and public services reach the most remote village tracts effectively. This technology enables us to transition toward a more data-driven approach for poverty reduction and regional resource allocation.

MR. HTET WAIYAN PHYO LATT

Deputy Staff Officer, Department of Rural Development, Ministry of Cooperatives and Rural Development, Government of the Republic of the Union of Myanmar, Nay Pyi Taw, Myanmar

6. Study Material for the Participants

Participants were provided with comprehensive study material to support their learning throughout the programme. This included session handouts, reading lists, case studies, and policy briefs prepared by CIRDAP and NIRDPR. The material covered both theoretical frameworks and practical examples, ensuring participants had access to diverse perspectives. The digital resources that were shared include:

1. Use of Geo-informatics in the Asia-Pacific region; Introduction to Geographical Information System;
2. Introduction to Remote Sensing;
3. Introduction to Global Positioning System;
4. Geographic Information System (GIS) in Gram Panchayat Development Plan (GPDP);
5. GIS for Rural Infrastructure Mapping;
6. Geospatial Practices for Sustainable Development in Asia and the Pacific 2020_A Compendium;
7. Geospatial Practices for Sustainable Development in South-East Asia 2022_A Compendium;
8. Earth Observation for a Transforming Asia and Pacific;
9. RD-Geoinformatics-Planning-a case study;
10. Application of GIS and Remote Sensing for Advancing Sustainable Fisheries Management in Southeast Asia;
11. FOSS4G-Asia-2021-Proceedings;
12. Geoinformatics Application in Disaster Management-NIDM;
13. Remote sensing of agriculture – South/Southeast Asia; and
14. Strategic Plan of Centre on Geoinformatics Applications for Rural Development-CIRDAP.

The study material was designed to serve as a reference beyond the programme, enabling participants to revisit concepts and apply them in their professional work. By combining academic literature with field-based case studies, the material provided a balanced view of rural development challenges and solutions. It also emphasized cross-cutting themes like gender, environment, and technology, ensuring participants could approach issues holistically. All the participants were provided with study material, PowerPoint presentations by experts and photographs on a pen drive on the last day of the programme. Overall, the study material was a valuable resource, complementing the sessions and enhancing the learning experience.

The 'Geo-Informatics Applications in Rural Development' training was well-structured and insightful. As a beginner, it provided me with a comprehensive introduction to spatial data and its practical applications in the field. I gained a clear understanding of how GIS can revolutionize sectors critical to Bangladesh, such as precision agriculture, efficient land use planning, and proactive disaster management. Learning to navigate platforms like Bhuvan and Samudra, alongside methods for accessing free satellite data, was particularly eye-opening, as these tools offer cost-effective solutions for long-term rural planning in our resource-constrained context. The practical exposure gained through field visits to ICRISAT, INCOIS, and the RTP bridged the gap between theory and reality, demonstrating how advanced geosensing technologies can be scaled for real-world impact. Overall, this training has empowered me with the foundational skills to contribute effectively to Bangladesh's rural development through modern technology.

MD ABU TALEB
Joint Director, Bangladesh Academy for Rural Development (BARD), Bangladesh

7. Inauguration of the Programme

The programme officially began with registration. A presentation on CIRDAP and its activities was made by Dr Venkatamallu Thadaboina, Programme Officer-Learning, CIRDAP & the Programme Director from CIRDAP, followed by the NIRDPR video. During the inaugural session, the Hon'ble Director General of CIRDAP expressed gratitude to the Government of India for funding three training programmes and to the participating CIRDAP Member Countries for nominating their representatives. This collective effort emphasized the importance of collaboration and knowledge exchange in advancing rural development. The inaugural address mainly focused on the use of Geographic Information Systems (GIS) as a powerful tool for planning, monitoring, and implementing initiatives. GIS was highlighted for its ability to identify villages, clusters, and underserved populations, resolve land disputes, and address disparities in health and education infrastructure. Participants explored practical applications in agriculture, disaster management, fisheries, and climate change adaptation. Examples included India's Drone Didi initiative, which uses drones to detect pest infestations and enable targeted pesticide application. The discussions concluded with insights into integrating Artificial Intelligence with GIS, promising advanced analytics and predictive modelling to revolutionize rural development planning and service delivery.

8. Programme Team, Resource Persons and Sessions

The programme was coordinated by a team of faculty from CIRDAP and NIRDPR, who possess vast experience in the rural development domain. Their effective coordination ensured the training programme was planned and executed successfully, fostering meaningful learning outcomes. This collaboration highlighted the critical role of institutional partnerships in advancing sustainable and integrated rural development and achieving impactful results for communities. The programme team details are as follows:

From CIRDAP	From NIRDPR		
			
Dr. Venkatamallu Thadaboina, Programme Officer, CIRDAP, Dhaka, Bangladesh	**Dr. P. Kesava Rao** Associate Professor & Head, CRTCN & CGARD, NIRDPR, India	**Dr. N S R Prasad** Assistant Professor, CGARD, NIRDPR, India	**Dr. A Simhachalam** Assistant Professor, CGARD, NIRDPR, India

The programme featured distinguished experts from academia, government, and international organizations, each bringing specialized knowledge in geo-informatics and rural development. The experts combined theoretical knowledge with practical examples, ensuring participants gained actionable insights. Their mentorship and guidance were instrumental in shaping the programme's outcomes, leaving participants inspired and better equipped to apply geo-informatics in their professional contexts.

8.1 "Geo-informatics – Innovative and best practices in Rural Development" by Dr P. Kesava Rao, Associate Professor & Head, Centre for Geoinformatics Application in Rural Development (CGARD), NIRDPR, Hyderabad, India


Dr. P. Kesava Rao, NIRDPR, India

The session focused on Geo-informatics and its innovative applications in rural development. Dr Kesava explained the role of remote sensing in assessing natural and cultural resources, highlighting how electromagnetic radiation is used to generate images. The distinction between passive and active remote sensing systems was emphasized, with active systems providing their own illumination and even capturing data below the earth's surface. Airborne remote sensing, using aircraft-mounted sensors, can produce images of 20 cm or less, while space technology supports national missions such as tele-education, tele-medicine, and polar orbit technologies. India's Earth Observation Missions, both Sun Synchronous and Geostationary, were discussed, along with their applications for mangrove mapping, coastal wetland monitoring, and agroecosystem vegetation monitoring. Indian imaging capabilities ranging from 65 cm to 188 m resolution were noted, and participants from Vietnam raised questions about the reliability of such data.

8.2 "Geo-informatics Applications in Agriculture – Best Practices in the Asia Pacific Region" by Dr. V.M. Chowdary, Group Director, Agriculture Sciences & Applications, National Remote Sensing Centre (NRSC), Hyderabad, India


Dr. V.M. Chowdary, NRSC, India

The session focused on Geo-informatics applications in the agriculture sector across the Asia-Pacific region. The session highlighted best practices that use GIS and remote sensing technologies to improve agricultural productivity, enhance resource management, and support climate resilience. Examples included monitoring crop health, optimizing irrigation, and identifying suitable areas for cultivation. The discussion emphasized how these technologies contribute to sustainable agriculture by reducing risks, improving efficiency, and supporting farmers with timely information. The session showcased the transformative role of geo-informatics in strengthening agricultural systems and ensuring food security in the region.

Through participating in this training on Geo-informatics, I can evaluate and understanding this training significantly strengthened capacity building in applying geographic information in rural development because geo-informatics is an intelligent and comprehensive system. It depends on how we understand and use it. For me, it is most suitable for identifying dry areas, disaster areas, and determining land use, crops that related to rural development and poverty reduction. In addition, to promoting vocational training in Technology geo park is also good an activity that I can be apply to improving in rural community in the Lao PDR.

Mr. KEDSADA SYSAI
Official staff, Rural Development and Poverty Reduction, Lao PDR

8.3 "Geo-informatics Applications in Water Resources - Best Practices in Asia Pacific Region" by Dr. Simhadri Rao, Group Director, Water Resources, National Remote Sensing Centre (NRSC), Hyderabad, India.

Dr. Simhadri Rao, NRSC, India

This insightful session on the role of geoinformatics in water resource management primarily emphasised how geospatial technologies are revolutionising water resource assessment and planning. Participants learned about applications such as surface water estimation, flood mapping, soil moisture analysis, and reservoir capacity assessment. The session highlighted how satellite remote sensing provides critical inputs for prefeasibility studies, hydropower site identification, canal alignment, and rehabilitation planning. Dr. Rao explained the use of diverse sensors—optical, passive radiometers, radars, altimeters, and microwaves—for monitoring rainfall, water spread, soil moisture, and snow parameters. He also discussed the global and Indian scenarios of earth observation data, noting the availability of open-access datasets. A key takeaway was the Falcon Mark indicator, which defines per capita water availability benchmarks, with less than 1000 cubic meters indicating severe scarcity. The methodology for calculating water availability was demonstrated through pilot studies in the Godavari and Brahmani-Baitarani basins, extending to 12 major and 6 minor river basins in India. The session concluded with applications in irrigation infrastructure mapping, monitoring canal construction, and evaluating minor irrigation systems, underscoring the direct link between water resource management and agricultural sustainability.

8.4 "Geo-informatics in Forestry & Ecology- Best Practices in Asia Pacific Region" by Dr. Ch. Sudhakar Reddy, Scientist, SG, Forestry & Ecology, National Remote Sensing Centre (NRSC), Hyderabad


Dr. Ch. Sudhakar Reddy, NRSC, India

Dr. Ch. Sudhakar Reddy presented the applications of geo-informatics in forestry and ecological monitoring. The session focused on assessing deforestation, forest fragmentation, and canopy height mapping using GEDI and Landsat data. Participants explored methods for estimating above-ground biomass and carbon stock at the tree level through terrestrial laser scanning, allometric approaches, and destructive testing. Dr Reddy highlighted the importance of monitoring long-term changes in carbon stocks and daily forest fire hotspots, which are crucial for disaster mitigation. The National Database for Emergency Management (NDEM) was introduced as a tool for early warning systems against floods, fires, and other ecological disasters. The session also covered biologically significant areas emphasizing ecosystem irreplaceability, vulnerability, and representativeness. Remote sensing was presented as an indispensable tool for monitoring forest cover, vegetation conditions, and landscape fragmentation. Importantly, Dr Reddy stressed that no single sensor can capture all forest attributes, underscoring the need for multi-sensor integration. The session provided participants with a comprehensive understanding of how geo-informatics supports sustainable forest management, biodiversity conservation, and ecological resilience in the Asia-Pacific region.

8.5 "Geo-informatics Applications in Fisheries: Experiences & Learnings from Asia and the Pacific" by Dr. Vinod Kumar Yadav, Senior Scientist (Agricultural Statistics), ICAR-Central Institute of Fisheries Education, Mumbai, India


Dr. Vinod Kumar Yadav, ICAR-CIFE, India

During this session, Dr. Vinod Kumar Yadav explained how GIS enables the storage, analysis, and visualization of spatial fisheries data, including fish distribution, habitat conditions, and fishing efforts. Remote sensing was described as a tool for gathering raw environmental information, while GIS processes and models this data to produce actionable maps. Participants learned how land-use changes, deforestation, and other environmental factors affect fisheries, and how geoinformatics can support planning and monitoring. The integration of remote sensing and GIS was shown to be vital for sustainable fisheries management, helping policymakers and practitioners identify suitable fishing zones, monitor aquatic ecosystems, and evaluate the impact of human activities. The session emphasized the importance of spatial technologies in ensuring food security, supporting livelihoods, and maintaining ecological balance in fisheries across Asia and the Pacific.

8.6 "Geo Informatics Applications in Disaster Management with special reference to Asia Pacific Region" by Dr. Shiva Prasad Sharma, Director, Disaster Management Support Centre, National Remote Sensing Centre (NRSC), Hyderabad, India


Dr. Shiva Prasad Sharma, NRSC, India

The technical session focused on the critical role of Geographic Information Systems (GIS) in disaster management in hazard mapping, vulnerability assessment, and disaster response planning. Participants were introduced to how GIS supports hazard mapping, vulnerability assessment, and disaster response planning. The session highlighted applications such as flood risk zoning, earthquake-prone area mapping, cyclone path prediction, and resource allocation during emergencies. GIS was presented as a powerful tool for integrating spatial data with socio-economic information, enabling authorities to plan evacuation routes, identify safe shelters, and prioritize relief operations. Case studies demonstrated how GIS has been successfully applied in disaster-prone regions across Asia-Pacific, reinforcing its value in both preparedness and post-disaster recovery. The session also emphasized the importance of multi-agency collaboration and open-access geospatial data for effective disaster risk reduction.

The training showed me how GIS and satellite data, combined with remote sensing, can lead to deeper analysis. Learning from senior scientists at NRSC, ISRO, and visits to ICRISAT and INCOIS made me realize we can build similar understanding in Nepal. Apart from ocean studies, all topics were highly relevant to my country and hope for future collaboration in adaptation of such innovation.

Aashish Kumar Chaudhary,
Engineer, Ministry of Federal Affairs and General Administration,
Singhadurbar, Kathmandu, Nepal 44600

8.7 "Bhuvan – A Geo portal of ISRO: Its use and applications in Rural Development and Decentralized Governance: Lessons for Asia Pacific countries" by Dr. Lesslie. A Scientist SG, National Remote Sensing Centre (NRSC), Indian Space Research Organisation (ISRO), Hyderabad, India

Dr. Lesslie. A, NRSC, India

This session of the international training programme focused on ISRO's Bhuvan portal and its applications in rural development and governance. Participants learned how Bhuvan provides satellite imagery, thematic maps, and spatial data services for grassroots planning. The session emphasized its role in monitoring rural infrastructure, tracking developmental schemes, and supporting governance through transparent and participatory mapping. Case studies demonstrated how Bhuvan has been applied in watershed management, agricultural monitoring, and village resource mapping, offering valuable lessons for Asia - Pacific countries. The portal was presented as a model for democratizing access to geospatial data, empowering local institutions, and enhancing evidence-based decision-making in rural governance.

9. Field Visits

Field visits were an integral part of the programme, offering participants firsthand exposure to rural development initiatives. Visits to institutions such as ICRISAT, the Rural Technology Park, and INCOIS showcased successful models of community participation, livelihood promotion, and technological innovation.

ICRISAT (International Crops Research Institute for the Semi-Arid Tropics): During their visit, participants were introduced to cutting-edge research in sustainable agriculture, climate-resilient crops, and precision farming. Demonstrations highlighted how geo-spatial tools are being used to monitor soil health, optimize water usage, and enhance crop productivity. The participants engaged in interactive discussions with scientists, gaining insights into how satellite imagery, GIS mapping, and remote sensing are integrated into agricultural planning and resource management.

The training programme was an eye-opener in understanding how geoinformatics can support rural development, with the visit to the Rural Technology Park (RTP) being particularly impressive. The RTP model effectively combines traditional livelihood training, such as house construction, beekeeping, and mushroom cultivation, with initial financial support to help local communities build sustainable livelihoods. However, the experience also highlighted that long-term success requires continuous monitoring and market-oriented planning. In this context, geoinformatics plays a vital role in integrating and analyzing spatial data on local resources, market demand, infrastructure, and risks, thereby supporting informed decision-making. This approach is also highly relevant to Viet Nam, where similar models, such as the OCOP (One Commune One Product) programme, have contributed to the development of rural cooperatives and local value chains.

Mr. BUI CONG THINH
Official, Ministry of Agriculture and Environment, No. 10 Ton That Thuyet Street, Cau Giay Ward, Hanoi City

Rural Technology Park (RTP): The visit to RTP at NIRDPR focuses on understanding the key initiatives of RTP and NIRDPR to promote rural livelihoods through entrepreneurship development, with a focus on non-farm livelihood activities in rural areas. Participants observed demonstrations of rural innovations and renewable energy solutions to empower communities. The visit emphasized the importance of linking research institutions with rural communities to ensure technology transfer and sustainable development. Overall, the day provided a balanced perspective—connecting high-level research with practical, community-oriented applications—reinforcing the relevance of geo-informatics in addressing rural development challenges.

INCOIS (Indian National Centre for Ocean Information Services): The visit to the INCOIS provided participants with a comprehensive understanding of how geo-informatics and oceanographic data are applied to disaster management and fisheries advisory services. At the Disaster Support Centre, they demonstrated how satellite remote sensing, ocean buoys, and numerical models are integrated to monitor and forecast ocean conditions. Participants observed how INCOIS delivers early warnings for cyclones, tsunamis, and storm surges, thereby safeguarding coastal communities. The centre's emphasis on real-time data dissemination and multi-agency coordination highlighted the critical role of geo-informatics in reducing disaster risks and enhancing resilience in vulnerable regions.

The visit also focused on the Potential Fishing Zone (PFZ) Advisory, a flagship service of INCOIS for Bay of Bengal countries. Using satellite-derived parameters such as sea surface temperature, chlorophyll concentration, and ocean currents, INCOIS identifies areas with high fish availability. Participants learned how these advisories are communicated to fishermen through mobile applications, SMS, and community networks, enabling them to optimize fishing efforts, reduce fuel costs, and increase productivity. The PFZ service was presented as a model of how space-based technologies can directly benefit rural livelihoods, particularly in coastal communities. Overall, the visit underscored the dual role of geo-informatics in disaster preparedness and livelihood enhancement, offering practical insights into regional cooperation and sustainable resource management. Participants also learned about the Samudra app and disaster support systems.

These visits allowed participants to interact with scientists, practitioners, and community members, deepening their understanding of ground realities. Group work sessions following the visits encouraged reflection and synthesis of learnings. By connecting classroom knowledge with field experiences, the visits reinforced the importance of context-specific solutions. They also fostered cross-cultural exchange, as participants compared observations from different countries. The field visits were a highlight of the programme, leaving lasting impressions and practical lessons for future application.

10. Country Paper Presentations

During the country paper presentations, all CMC representatives highlighted rural development as a central theme, with each delegate presenting innovative strategies tailored to their national context. A recurring emphasis was placed on the role of technology in transforming rural livelihoods. Representatives described how digital platforms are being used to connect farmers with markets, provide real-time weather updates, and deliver agricultural extension services through mobile applications. Several countries showcased the deployment of solar-powered irrigation systems and smart sensors to optimize water usage, addressing sustainability concerns. Collectively, these presentations underscored that technology is not merely an add-on but a driving force in reshaping rural development, fostering inclusivity, and ensuring long-term resilience across diverse regions.

11. Exposure to Indian Culture

In addition to academic and field activities, the programme included visits to cultural places, enriching participants' understanding of India's heritage.

The Golconda Fort light-and-sound show offered a glimpse into Hyderabad's historical legacy, while a visit to Ramoji Film City showcased India's creative industries and cultural diversity. These experiences provided participants with a broader perspective on the socio-cultural context of development. Cultural visits fostered camaraderie among participants, as they shared informal interactions and bonded over shared experiences. Exposure to local traditions, cuisine, and art added vibrancy to the programme, making it both educational and enjoyable. By integrating cultural immersion with academic learning, the programme emphasized the interconnectedness of social, economic, and cultural factors in development. These visits also underscored the role of cultural heritage in promoting tourism and livelihoods, linking back to themes discussed in the sessions. Overall, the cultural visits enriched the programme, offering participants a holistic experience that combined knowledge, practice, and appreciation of diversity.

The cultural evening during the training programme was a lively and unforgettable celebration of diversity. Representatives from each member country took the stage to share their heritage through songs, dances, and storytelling, creating an atmosphere filled with joy and pride. Each performance carried the essence of its country, reflecting centuries of history and cultural identity. Beyond the artistic displays, participants explained the meaning behind their traditions, offering valuable insights into their customs and values. This combination of entertainment and education fostered mutual respect and admiration among the audience. More than just a showcase, the event symbolized unity in diversity, reminding everyone that while each nation has its own distinct identity, together they form a harmonious global community. It was a truly enriching experience.

12. Back at Work Plans

The international training programme concluded with participants presenting their "Back at Work Plans," outlining how they intend to apply the knowledge gained in their respective countries and institutions. Each CMC representative has provided a list of three activities to be undertaken in their respective countries within 6 months of the programme's completion. Some of the post-training activities proposed are:

- Introduce at least one geoinformatics session in the Foundation Training Course for doctors, teachers, and other officials.
- Encourage project directors to incorporate existing geoinformatics-based services into beneficiary training, such as digital mapping and agroecological zone-specific cropping patterns.
- Organise one orientation program/seminar related to geo-informatics application in rural Development
- Mobile apps, GIS, web platforms for conducting door-to-door surveys for rural development (e.g., KoboToolbox, ODK) for getting real-time and original location-based data.
- Maintain a digital database of project beneficiaries, including their geographic locations, to simplify locating them for follow-up activities.
- During rural-level planning, utilize geoinformatics resources from LGED and other organisations to enhance planning accuracy
- Conduct Knowledge Sharing Sessions to transfer acquired skills and concepts to colleagues.
- Convert existing field data into Digital Maps using GIS software for better visualization.
- Establish a Spatial Decision Support System (SDSS) to use GIS analysis as a primary tool for project planning and decision-making.
- Partnering with NGOs project and relevant sectors to support the training program on using GIS in terms of Rural development (Pro-FEB(GIZ) and Lao Landscape and Livelihood (LLL), Asia Development Bank (ADB)

13. Feedback & Evaluation

The evaluation revealed highly positive feedback: 70% rated the course "Excellent" and 30% "Very Good." Comments praised the well-designed structure, effective management, and suggested improvements such as adjusting session timings, integrating field visits immediately after lectures, offering international food options, and including more hands-on demonstrations. Suggestions also included arranging visits to gram panchayats to observe geo-tagging at the grassroots level. Overall, the evaluation confirmed the programme's success in combining theory, practice, and regional collaboration, leaving participants motivated to implement geo-informatics solutions in rural development. The suggestions of the participants have been noted for further improvement.

14. Suggestions for Improvements

If the given country-wise slots are not filled for any reason, in the interest of maximising the benefit of the programme to member countries, slots may be permitted to be filled by any other member country.

15. Way Forward

During the country presentations by CIRDAP Member Country representatives, it was observed that CMCs currently lack adequate technological capacity, particularly in the application of geospatial technologies for rural development. To address this gap, the following steps are proposed:

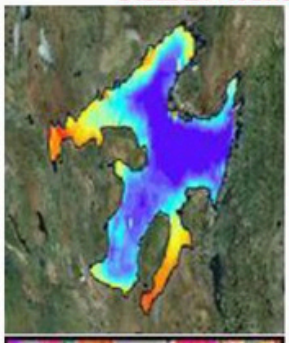
1. **Institutional Linkages:** Establish partnerships between technologically advanced institutions, such as INCOIS and NRSC, with CIRDAP Member Countries to facilitate the effective use of innovations in sustainable rural development.
2. **Capacity Building:** Organize in-country training programmes and exposure visits for CIRDAP Member Country officials, focusing on innovative best practices in geospatial technologies and other technological advancements relevant to rural development.
3. **Pivotal Role of CIRDAP:** Leverage CIRDAP's networking capabilities to connect advanced institutions with CMCs and coordinate training programmes and exposure visits for CIRDAP Member Country delegates.

16. Conclusion

The programme successfully achieved its objectives of enhancing knowledge, building capacities, and fostering regional cooperation in rural development. By combining academic sessions, expert-led discussions, study material, field visits, and cultural immersion, it provided participants with a holistic learning experience. The collaboration between CIRDAP and NIRDPR ensured that the programme was both regionally relevant and globally informed. Participants left with a deeper understanding of geo-informatics applications in agriculture, water resources, forestry, fisheries, and disaster management. The exposure to diverse themes and perspectives encouraged critical thinking and innovation, while interactions with experts and communities reinforced the importance of participatory approaches. The cultural visits added a unique dimension, reminding participants of the role of heritage and identity in development. Overall, the programme was a valuable platform for knowledge exchange, networking, and collaboration, contributing to the shared goal of sustainable and inclusive rural transformation across Asia and the Pacific. The evaluation confirmed the programme's effectiveness, with participants motivated to implement geo-informatics solutions in their respective countries. CIRDAP will publish a book on the theme in coordination with NIRDPR and experts for wider dissemination to Asia and Pacific Countries.

NIRDPR&CIRDAP
Collaborative International Training Programme on "Geo-Informatics Applications in Rural Development"
(30th March -04 April, 2026)

Farm Level Resource Inventory



Variations of crop health within the fields, using Satellite Data

A vector layer over a true colour satellite image, showing different fields.

Centre for Geoinformatics Application in Rural Development (CGARD)
NATIONAL INSTITUTE OF RURAL DEVELOPMENT & PANCHAYAT RAJ
(An organization of the Ministry of Rural Development, Government of India)
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Telangana, India
Website: http://www.nird.org.in

Need of the Programme:

This particular course has earlier proved to be highly useful to CIRDAP member countries as all of them are confronted with major challenges in framing policies and actions for rural development in realizing the Sustainable Development Goals (SDGs). A need was felt to go ahead with sustainable commitments and programming for pro-poor policies and actions. The Indian experience has been very useful to the member countries in these efforts in agricultural and rural development. It is being felt that since poverty is still a big human problem, it requires proper integration of human, technological, and institutional interventions to ensure sustainable use of natural resources and the environment. In this respect, the Geo-informatic applications for rural resource development and capacity building have been found to play a potential role in promoting natural resource productivity for sustainable development for good governance and service delivery to the poor.

In the recent past in India and some other Asian countries, Geo-spatial technologies has emerged as an effective tool in designing rural development programmes, with focus on sustainable poverty reduction and environmental conservation. The recent trend is to move towards convergence of Remote Sensing, Geographic Information System and Global Positioning System for better managing the natural resources and the environment for achieving economic and social goals. With rapid advances, these technologies are now widely accessible at affordable costs. The Geo-spatial technologies, has already created an enormous impact on virtually every field of activity that requires management and analysis of spatially distributed data.

PROGRAMME OBJECTIVES:

Specific:

(1) To train the participants in the current use of the spatial technologies like the RS, GIS, GPS in rural development;

(2) To discuss various application potentials of geoinformatics in development programmes with specific reference to their countries and exchange ideas and experiences in formulating and implementing the GIS technologies, assess the feasibility of meeting the regional needs based on existing manpower, software, hardware and data availability and assess the training needs and resources requirements at the country level;

General:

(3) To promote effective networking among the relevant institutions in the countries of the region and to address common rural development issues and promote information sharing and for South-South cooperation;

(4) To present case studies on application of the Geo-spatial technologies in specific areas for dissemination at the regional level; and

(5) To strengthen capacity building efforts of member countries through training so as to accelerate rural development and poverty reduction in the region to achieve SDGs.

Structure and Outline

Specific areas in rural development planning, including watershed planning, land use and land cover, forestry, agriculture, infrastructure, water resources and governance issues where the application of Geo-spatial technologies would be most effective and work out specific proposals for follow-up actions. There will be knowledge dissemination on various GIS and Image processing Software and various modules and web portals with capabilities; Professional inputs will be provided by resource papers and country level statements on the themes and subjects.

PARTICIPANTS:

Participants will include all CIRDAP Member Countries viz., Afghanistan, Bangladesh, Fiji, India, Indonesia, Iran, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam. The participation will be at a senior level which will permit policy recommendations and commitment to actions or acceptance of follow-up responsibility.

The Delegates are suggested to bring along with them a detail summarized presentation on Status of Geo-informatics in their respective countries. The presentations and discussions on different aspects of the subject will provide the opportunity for identification of the common problems and issues to be addressed.

FACULTY:

The Centre on Geoinformatics Application in Rural Development (CGARD), NIRD&PR has Technically Qualified Multidisciplinary Scientific and Professional Team, highly qualified and experienced in all aspects of Geoinformatics, both in development and application modules, who will train the delegates. In addition eminent Geoinformatics Resource Persons, who have done considerable work in this field, too will be drawn for addressing the delegates and demonstrating various application modules.

PROGRAM TEAM:

Dr P Kesava Rao, Dr. N S R Prasad, Dr. A Simhachalam of the Centre on Geoinformatics Application in Rural Development (CGARD), NIRD&PR and Dr. T Venkatamallu Programme Officer (Learning), CIRDAP.

BOARD AND LODGE:

The training programme is fully residential. The Institute has well furnished Guest Houses for International Participants and has all facilities within the sprawling campus of NIRD&PR, at Rajendranagar, Hyderabad, India.

CIRDAP-NIRDPR Collaborative International Training Programme on

"Geo-Informatics Applications in Rural Development"

30 March - 04 April, 2026

PROGRAMME SCHEDULE

March 29, 2026 (Sunday)		Arrival of the delegates at NIRDPR Campus, Hyderabad, India	
Day /Date	**Time (hrs.)**	**Topic**	**Resource person**
Day-1 (Monday) **March 30, 2026**	0930-1000	Registration	C-GARD Staff
	1000-1045	NIRDPR & CIRDAP Slide Show	C-GARD Staff
	1045-1100	Welcome & Participant's Interaction	Course Team
	1100-1130	Inauguration & Welcome Address (S K Rau Conference Hall)	Dr. P Chandra Shekara Director General, CIRDAP
	1130-1145	Group Photograph & High Tea	
	1145-1200	Presentation of Course Curriculum	Dr. P Kesava Rao
	1200-1330	Geo-informatics - Innovative and best practices in Rural Development	Dr. P Kesava Rao
	1430-1630	Geo-informatics Applications in Agriculture - Best Practices in the Asia Pacific Region	Dr. V M Chowdary Group Director, Agriculture Sciences & Applications, NRSC
	1630-1800	Country Presentations	Delegates
Day-2 (Tuesday) **March 31, 2026**	0900-1400	Visit to the International Crop Research Institute for Semi-Arid Tropics (ICRISAT)	Dr. N.S.R.Prasad & Dr. Venkatamallu Thadaboina, CIRDAP
	1500-1730	Visit to Rural Technology Park (RTP)	Dr. N.S.R. Prasad & Dr. Venkatamallu Thadaboina, CIRDAP
	1730-1800	Group Work on learning's on Visit to ICRISAT & RTP	Delegates
Day-3 (Wednesday) **April 01, 2026**	0930-1130	Geo-informatics Applications in Water Resources - Best Practices in Asia Pacific Region	Dr. Simhadri Rao Group Director, Water Resources, NRSC
	1130-1330	Geo-informatics in Forestry & Ecology- Best Practices in Asia Pacific Region	Dr. Ch. Sudhakar Reddy, Scientist, SG, Forestry & Ecology, NRSC
	1430-1630	Geo-informatics Applications in Fisheries: Experiences & Learnings from Asia and the Pacific	Dr. Vinod Kumar Yadav ICAR-Central Institute of Fisheries Education.
	1630-1730	Group Work on Natural Resources Management using Geo-informatics	Delegates

	1800-2030	Visit to Golconda Light and Sound	CGARD Staff
Day /Date	**Time (hrs.)**	**Topic**	**Resource person**
Day-4 (Thursday) **April 02, 2026**	0900-1400	Visit to INCOIS –Disaster Support Centre/ Potential Fishing Zone Advisory for Bay of Bengal Countries.	Dr. A Simhachalam & Dr. Venkatamallu Thadaboina, CIRDAP
	1530-1730	Geo Informatics Applications in Disaster Management with special reference to Asia Pacific Region	Dr. KHV Durga Rao Group Director, Disaster Support Centre, NRSC
	1730-1800	Group Work on learning's on Visit to INCOIS	Delegates
Day-5 (Friday) **April 03, 2026**	0800-2000	Visit to Ramoji Film City (Institute Holiday on the Eve of Good Friday)	Dr A. Simhachalam & Dr. Venkatamallu Thadaboina, CIRDAP
Day-6 (Saturday) **April 04, 2026**	0930-1130	Bhuvan – A Geo portal of ISRO: Its use and applications in Rural Development and Decentralized Governance: Lessons for Asia Pacific countries	Dr. Lesslie. A Scientist SG RDWMD, NRSC, ISRO
	1130-1330	Presentations on learnings & back at work plans	Delegates
	1430-1600	Evaluation of the course and Valedictory	DG, CIRDAP; Course Team
April 05, 2026 (Sunday)		Departure from NIRDPR, Hyderabad, India	

Lunch Break : **1330 - 1430**
Tea Break : **11.30 - 11.45** (Morning Session) **& 16.00 - 16.15** (Evening Session)

Programme Team:
Dr P Kesava Rao, Associate Prof. & Head, CGARD & CRTCN, NIRDPR
Dr. N.S.R.Prasad, Assistant Professor, CGARD, NIRDPR
Dr A. Simhachalam, Assistant Professor, CGARD, NIRDPR
Dr Venkatamallu Thadaboina, Programme Officer-Learning, CIRDAP.

Sl. No.	Photo	Details of the Participant
1		**Ms. MOHOTTIGE UDULA JENY SEDERA** Development Officer, Ministry of Agriculture, Livestock, Land & Irrigation, Sri Lanka, +94 77189609, jeny.usedera@gmail.com
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4		**Mr. SIMIONE SOROWALE** Divisional Planning Officer, Office of the Divisional Commissioner Eastern, Ministry for Rural and Maritime Development & Disaster Management, Fiji, +679 7040387 / 2449550, simione.sorowale@rural.gov.fj,
5		**Mr. AASHISH KUMAR CHAUDHARY** Engineer, Ministry of Federal Affairs and General Administration, Nepal +97 79869353858, jeevan.sagar311211@gmail.com
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8		**Mr. BUI CONG THINH** Official, Department of Digital Transformation - Ministry of Agriculture and Environment, Vietnam, +84 868603065, thinhbc@gmail.com

Sl. No.	Photo	Details of the Participant
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17		**Dr. P. CHANDRA SHEKARA** Director General, CIRDAP, Dhaka, Bangladesh +91 98483 08111; +88 01713 031891, chandradgcirdap@cirdap.org


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