FMD रक्षक

A Bimonthly Newsletter of ICAR-National Institute on Foot and Mouth Disease, Bhubaneswar

ICAR-NIFMD

Steering Evidence-Based FMD Control in India

Vol-1(1) - January-February, 2026

Director's Message

It gives me immense pleasure to present the inaugural issue of *FMD रक्षक*, the bimonthly newsletter of ICAR–National Institute on Foot and Mouth Disease (ICAR-NIFMD), Bhubaneswar, highlighting our functioning, recent achievements, research advancements, and outreach initiatives. This initiative marks an important step towards strengthening communication, knowledge sharing, and coordinated action among researchers, field veterinarians, policymakers, and all stakeholders engaged in the control and eventual elimination of FMD in India.

FMD continues to impact livestock productivity and rural livelihoods, despite notable progress under LHDCP and ongoing biannual vaccination campaigns. The evolving epidemiological scenario and transboundary risks highlight the need for sustained vigilance and coordinated action. ICAR-NIFMD remains committed to supporting national control efforts through strengthened diagnostics, surveillance, research, and field-oriented interventions.

This newsletter is envisioned as a platform to bring together the latest scientific developments, field experiences, outbreak analyses, and policy perspectives related to FMD. It will also highlight important national and global events, emerging risks, technological advancements, and success stories. By integrating both scientific rigour and practical relevance, *FMD रक्षक* aims to serve as a ready reference for veterinarians and a knowledge bridge between laboratory research and field implementation.

The name *"FMD रक्षक"* reflects our collective mission to protect livestock health and safeguard the economic security of our farmers. In this spirit, I encourage all scientists, veterinarians, and stakeholders to actively contribute to this platform by sharing their insights, experiences, and innovations. Your contributions will enrich this initiative and help us move closer to our shared goal of FMD control and elimination in the country.

I would like to convey my sincere gratitude to Dr M L Jat, Hon'ble Secretary, DARE & DG, ICAR; Dr R Bhatta, DDG (AS), ICAR; and Dr D Hemadri, ADG (AH), ICAR, for their invaluable support and guidance in leading the Institute.

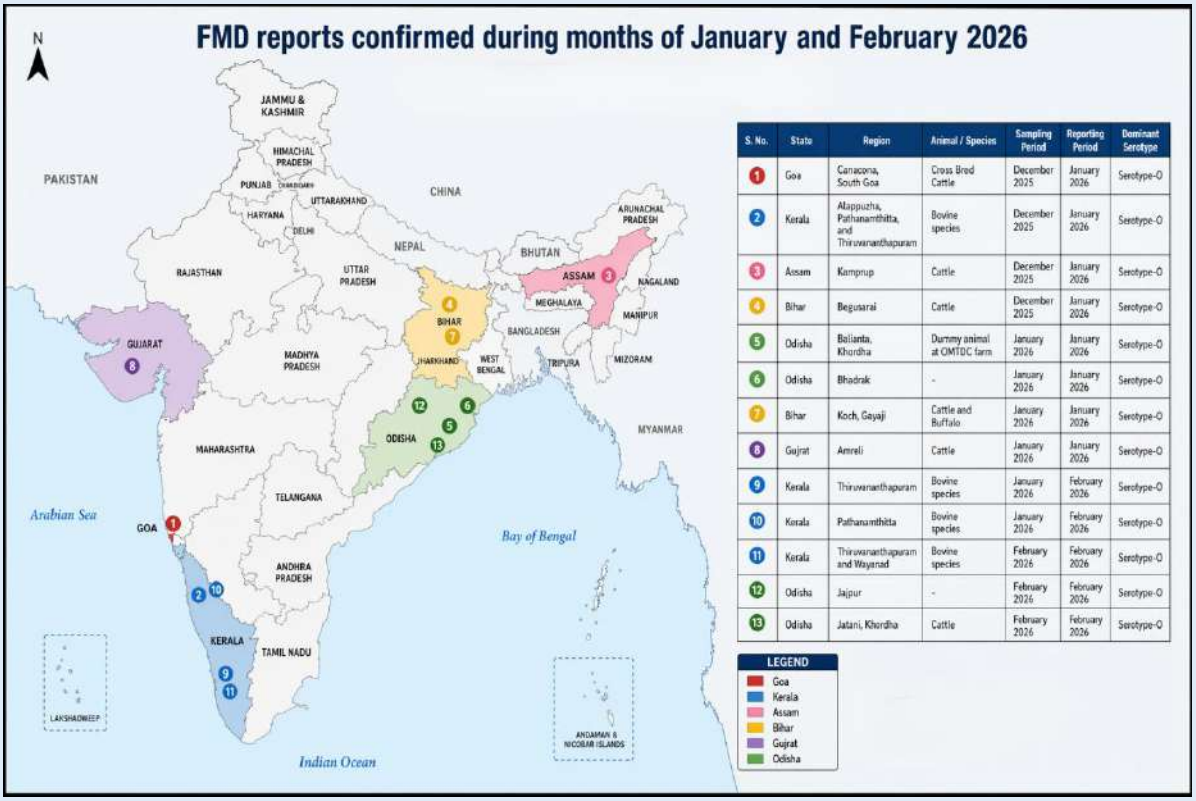
Dr R. P. Singh

FMD Reports in India

FMD surveillance remains a critical component of livestock health management in India, providing timely insights into disease occurrence, spread, and circulating serotypes under the national control program. The compiled data from reports confirmed at ICAR-NIFMD during the period of January to February 2026 indicate a geographically widespread occurrence of FMD across six states including, Goa, Kerala, Assam, Bihar, Odisha, and Gujarat, covering diverse agro-climatic regions of the country.

Notably, serotype O was the only serotype identified across all reports, reaffirming its continued dominance in India. The highest number of reports (five each) were from Odisha and Kerala, followed by Bihar (two), while Goa, Assam, and Gujarat each recorded a single outbreak.

The temporal pattern indicates that field sampling and confirmatory diagnosis at ICAR-NIFMD were conducted between December 2025 and February 2026, reflecting a timely and efficient surveillance and diagnostic response. Overall, the data reveals the continued endemicity of FMD in India, with recurrent outbreaks across multiple regions predominantly associated with Serotype O.



S. No.	State	Region	Animal / Species	Sampling Period	Reporting Period	Dominant Serotype
1	Goa	Canacona, South Goa	Cross Bred Cattle	December 2025	January 2026	Serotype-O
2	Kerala	Alappuzha, Pathanamthitta, and Thiruvananthapuram	Bovine species	December 2025	January 2026	Serotype-O
3	Assam	Kamprup	Cattle	December 2025	January 2026	Serotype-O
4	Bihar	Begusarai	Cattle	December 2025	January 2026	Serotype-O
5	Odisha	Ballanta, Khordha	Dummy animal at OMTDC farm	January 2026	January 2026	Serotype-O
6	Odisha	Bhadrak	-	January 2026	January 2026	Serotype-O
7	Bihar	Koch, Gayaji	Cattle and Buffalo	January 2026	January 2026	Serotype-O
8	Gujrat	Amreli	Cattle	January 2026	January 2026	Serotype-O
9	Kerala	Thiruvananthapuram	Bovine species	January 2026	February 2026	Serotype-O
10	Kerala	Pathanamthitta	Bovine species	January 2026	February 2026	Serotype-O
11	Kerala	Thiruvananthapuram and Wayanad	Bovine species	February 2026	February 2026	Serotype-O
12	Odisha	Jajpur	-	February 2026	February 2026	Serotype-O
13	Odisha	Jatani, Khordha	Cattle	February 2026	February 2026	Serotype-O

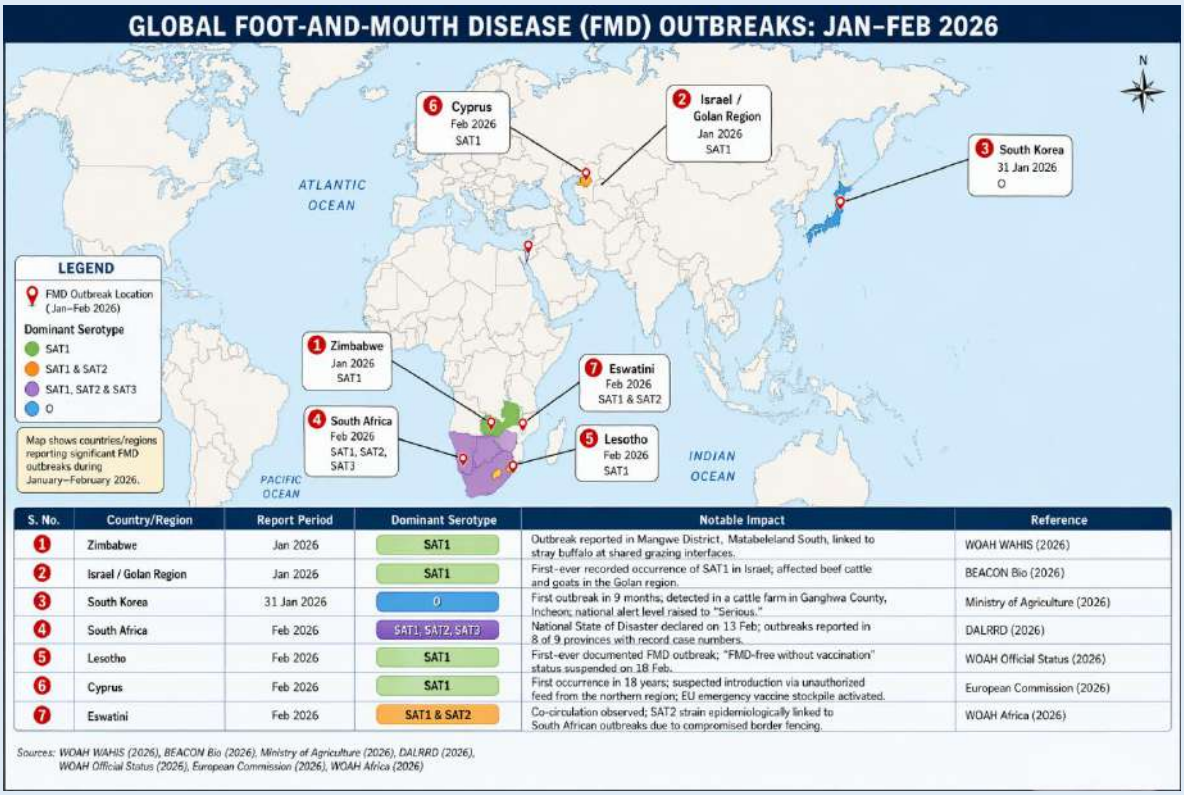
Major FMD Outbreaks Reported by WOAH

As part of preparedness for incursion of new serotypes of FMDV in India, it is essential to track the reports of FMD outside India. It is important to keep all stakeholders well informed about the movement of FMD virus in the world. Particularly the exotic SAT strains of FMDV have shown alarming transboundary movement.

In January and February 2026, the World Organisation for Animal Health (WOAH) reported multiple notifications of FMD outbreaks through its World Animal Health Information System (WAHIS). This period was characterized by a notable expansion of SAT serotypes beyond their usual endemic zones and an escalation of disease situations in several regions, including southern Africa and parts of Europe.

Lesotho reported its first recorded FMD outbreak to the WOAH, with clinical signs observed in February 2026 in the Butha-Buthe district. The causative serotype was confirmed as SAT1 by a regional reference laboratory, and consequently, WOAH suspended Lesotho's FMD-free without vaccination status.

South Africa reported a severe escalation of FMD during early 2026, with outbreaks affecting multiple provinces. The disease situation prompted national-level emergency responses, with thousands of cases reported and multiple SAT serotypes (SAT1, SAT2, and SAT3) implicated in circulation.



S. No.	Country/Region	Report Period	Dominant Serotype	Notable Impact	Reference
1	Zimbabwe	Jan 2026	SAT1	Outbreak reported in Mangwe District, Matabeleland South, linked to stray buffalo at shared grazing interfaces.	WOAH WAHIS (2026)
2	Israel / Golan Region	Jan 2026	SAT1	First-ever recorded occurrence of SAT1 in Israel; affected beef cattle and goats in the Golan region.	BEACON Bio (2026)
3	South Korea	31 Jan 2026	O	First outbreak in 9 months; detected in a cattle farm in Ganghwa County, Incheon; national alert level raised to "Serious."	Ministry of Agriculture (2026)
4	South Africa	Feb 2026	SAT1, SAT2, SAT3	National State of Disaster declared on 13 Feb; outbreaks reported in 8 of 9 provinces with record case numbers.	DALRRD (2026)
5	Lesotho	Feb 2026	SAT1	First-ever documented FMD outbreak; "FMD-free without vaccination" status suspended on 18 Feb.	WOAH Official Status (2026)
6	Cyprus	Feb 2026	SAT1	First occurrence in 18 years; suspected introduction via unauthorized feed from the northern region; EU emergency vaccine stockpile activated.	European Commission (2026)
7	Eswatini	Feb 2026	SAT1 & SAT2	Co-circulation observed; SAT2 strain epidemiologically linked to South African outbreaks due to compromised border fencing.	WOAH Africa (2026)

Sources: WOAH WAHIS (2026), BEACON Bio (2026), Ministry of Agriculture (2026), DALRRD (2026), WOAH Official Status (2026), European Commission (2026), WOAH Africa (2026)

**Draft visualization generated with AI assistance and refined by the authors according to publically available outbreak data.*

Cyprus reported multiple outbreaks of FMD in February 2026 involving domestic livestock in the Larnaca district, marking the first occurrence of the disease in the country since 2007. The SAT1 serotype was identified, leading to suspension of its FMD-free status. The European Union (EU) deployed veterinary emergency assistance and supported vaccination and containment measures in affected and at-risk regions.

Eswatini reported continued circulation of SAT1 and SAT2 serotypes with multiple outbreaks notified to the WOAH during February 2026, particularly in northern and central regions of the country.

South Korea reported an outbreak of FMD caused by serotype O on 31 January 2026, marking the first occurrence after a nine-month disease-free period. The outbreak, detected in cattle in Ganghwa County, Incheon, led to escalation of the national alert level to "Serious."

Zimbabwe confirmed an outbreak in early January 2026 in Matabeleland South province, with laboratory diagnosis indicating the SAT1 serotype. The outbreak was epidemiologically linked to wildlife–livestock interface transmission, particularly African buffalo sharing grazing grounds.

Botswana reported an outbreak in cattle in January 2026 within a defined veterinary zone, resulting in the implementation of movement restrictions and trade control measures.

Overall, the period highlights a concerning epidemiological trend marked by the geographic expansion of SAT1 and continued multi-serotype circulation in endemic regions, underscoring the need for strengthened global surveillance, rapid diagnostics, and coordinated response strategies.

How far SAT-1 is from India?

The recent international pattern of FMD serotype SAT1 indicates that the strain is moving progressively closer to India in epidemiological terms, even though it has not yet been reported within the country. While several outbreaks remain concentrated in southern Africa, the occurrence of SAT1 in Israel

/Golan shows that the virus has expanded into the Middle Eastern countries, significantly reducing the geographic and transboundary gap between the currently affected regions and South Asia. Thus, SAT1 cannot be considered a remote threat for India; rather, it should now be regarded as a near-regional emerging risk requiring heightened preparedness, surveillance, and border vigilance.

In practical terms, SAT1 may be described as not at India's border yet, but uncomfortably closer than before. The threat is no longer only "African"; it has shown an ability to jump into new epidemiological zones and continue spreading in susceptible livestock populations. WOAH has specifically warned that SAT1 has spread beyond its historical African range into countries in Southern Africa, Asia, Europe, and the Middle East.

Diagnostic Support Services

Diagnostic Kit Supply

ICAR-NIFMD supplies various diagnostic kits to different stake holders and collaborators from private industries.

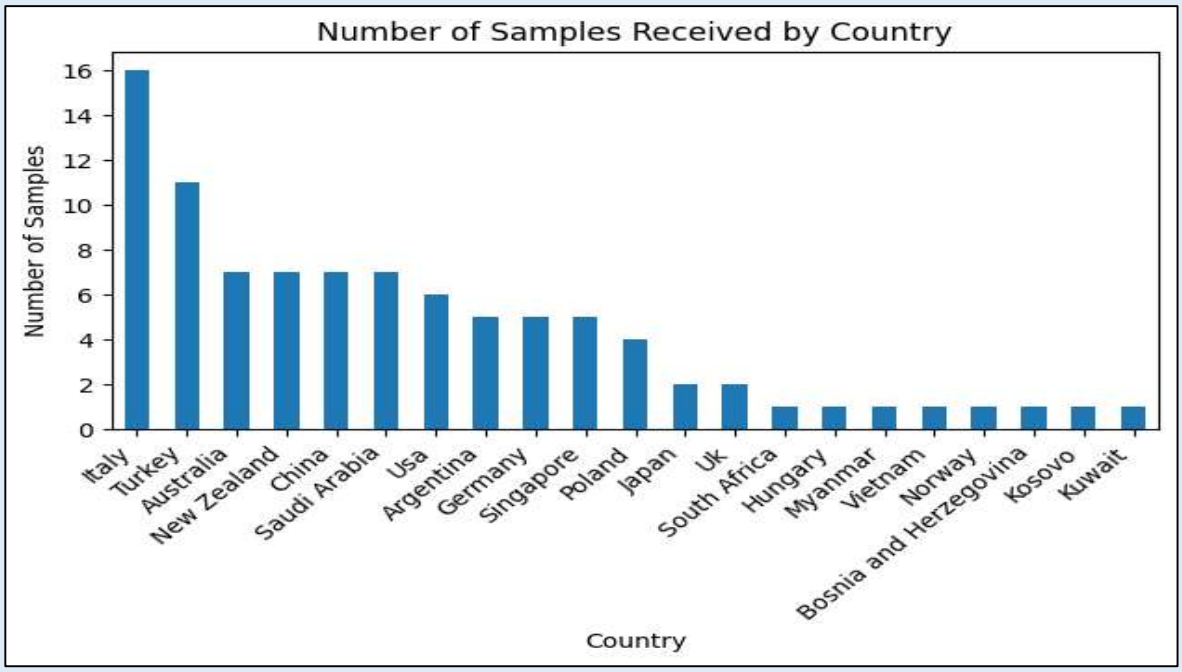
During the month of January, kits with a total testing capacity of **4,000 samples (SPCE Kit)** were supplied. In addition, kits with capacities of **5,546 samples (3AB3 NSP iELISA Kit)** and **500 samples (Serotyping ELISA Kit)** were also supplied.

During the month of February, SPC ELISA kits with a total testing capacity of **8,350 samples** were supplied under the LHDCP program. In addition, as part of the Technology Transfer (ToT) to M/s Reliance Life Sciences Pvt. Ltd., kits with capacities of **500 samples (SPC ELISA Kit), 450 samples (3AB3 NSP iELISA Kit),** and **100 samples (Serotyping ELISA Kit)** were supplied.

Testing of Imported Trade Samples for FMD Virus

In January and February 2026, ICAR-NIFMD received a total of 101 trade samples from various Animal Quarantine and Certification Services (AQCS) stations across India, including New Delhi, Chennai, Navi Mumbai, and Bengaluru. These samples were submitted for diagnostic screening of FMD virus as part of routine import surveillance.

Comparative Chart of Trade samples received for screening from different countries



The samples comprised a wide range of animal-origin commodities, predominantly cattle hides, sheep and lamb skins, leather products, wet/salted hides, pickled pelts, and processed animal materials. A small number of processed products such as pet food items and animal-based consumables, were also included. A few samples in the consignment represented wild animal–origin materials (e.g., deer skin, reindeer skin, kangaroo skin) and uncommon animal fibres/products such as mohair, indicating the diversity of imported commodities. Although less frequent, such items warrant careful screening as they may originate from regions with different disease epidemiology and can pose a potential biosecurity risk for transboundary diseases like FMD. The majority of samples originated from multiple countries, notably **Italy, Turkey, Australia, New Zealand, China, Saudi Arabia, USA, Argentina, Germany, Singapore, Poland, Japan, UK** and others, reflecting diverse global trade linkages.

A significant proportion of submissions consisted of cattle hide and leather materials, followed by sheep and lamb-derived products, indicating higher import volume and associated surveillance focus on these commodities. Many samples were preserved forms (wet-salted, pickled, drum-salted), which are commonly traded but still require stringent biosecurity screening due to the potential for FMD virus survival under certain conditions. This surveillance activity highlights the critical role of ICAR-NIFMD in safeguarding India's livestock sector by monitoring imported biological materials and supporting quarantine systems. Continuous vigilance remains essential, especially considering the endemic presence of FMD in several parts of the world and the risk associated with international trade in animal-origin products.

Strengthening Quality Assurance Systems at ICAR-NIFMD

As part of its continued commitment to excellence and standardisation, ICAR-NIFMD has undertaken significant steps to strengthen its quality assurance framework. The institute has initiated the establishment and implementation of a Quality Management System in accordance with ISO 9001:2015 and ISO/IEC 17025:2017 standards. In this direction, Standard Operating Procedures (SOPs) for all major laboratory equipment have been systematically prepared and finalised to ensure consistency, reliability, and traceability in laboratory operations. Further reinforcing these efforts, an internal audit in line with ISO 9001:2015 requirements was successfully conducted on 17th and 18th February, 2026 to evaluate compliance and identify areas for continual improvement.

Vaccine Quality Control

As part of the routine mandate of the institute, vaccine quality control activities were successfully carried out at ICAR-NIFMD. In January 2026, one batch of a commercial vaccine was tested at the Government Cattle Breeding Farm, Anjora, Durg, Chhattisgarh. In February 2026, another batch was tested at the State Cattle Breeding Farm, Saraikela, Jharkhand.

Success Stories

Transfer of FMD Vaccine Technologies from ICAR-NIFMD to Reliance Life Sciences Pvt Ltd.

On 13th January, 2026, Agrinnovate India Ltd. facilitated the transfer of three advanced FMD vaccine technologies developed by ICAR-NIFMD, Bhubaneswar, to Reliance Life Sciences Pvt. Ltd., through a Technology Licence Agreement (TLA) signed in New Delhi. Agrinnovate India Ltd., a company under DARE, played a key role in enabling this partnership, which aims to strengthen the country's indigenous vaccine manufacturing capacity.

The transfer of these technologies is expected to enhance domestic production of FMD vaccines and significantly support India's national FMD control program by strengthening animal health security.

Capacity Building Programs

- Two hands-on training programs on Concept, demonstration cum hands-on training on FMD Vaccine were organized in which two staff members each from M/s. Enneva Therapeutics Pvt. Ltd., and M/s. Reliance Life Sciences, Nasik Pvt. Ltd., participated. This training was organized as part of Transfer of Technology.

- Four hands-on training programs of 5 days duration each on FMD Serotyping, Sero-surveillance and Sero-monitoring were organized in which 7 staff from IAH & VB, Hebbal, Bangalore, FMD Typing Scheme, Ahmedabad, Gujarat, FMD Collaborating Centre, Rishikesh, Uttarakhand and NRDDL, Jalandhar, Punjab participated.

Meetings/Workshops

Submission of 7th QRT report of ICAR-NIFMD to Hon'ble DG, ICAR

The Chairman of 7th Quinquennial Review Team (QRT) (Period 2019-2024), Prof K M L Pathak presented the final QRT report to the Hon'ble Director General, ICAR and Secretary, DARE, Dr M L Jat, on 14th January 2026.

Brainstorming Session on mRNA Vaccine Platform Held at ICAR-NIFMD, Bhubaneswar

A national-level brainstorming session on "mRNA Vaccine Platform for the Control of Transboundary Viral Diseases with Pandemic Potential including Foot-and-Mouth Disease (FMD)" was successfully organised in hybrid mode at ICAR-NIFMD on 20th February, 2026.

The program was conducted according to the recommendation of the Research Advisory Committee of the institute. Leading experts from across the country participated and shared their insights on recent advancements and future prospects of mRNA-based vaccine strategies. The technical session featured distinguished speakers, including Dr N Kumar, Director of ICMR-NIV, Dr M Surjit from BRIC-THSTI, and Dr S H Basagoudanavar, Principal Scientist at ICAR-IVRI. Expert panel members Dr B Pattnaik, Ex Director ICAR-NIFMD and Director Research, SOA University, and Dr A K Patel, Scientist D and Joint Director at Gujarat Biotechnology Research Centre, were also present in the Brainstorming session.

Extension/Outreach and Social Development Activities

Input distribution under DAPST Program for Support and Assistance for Backyard Poultry Farming

Input distribution programs were organised by ICAR-NIFMD under DAPST for ST beneficiaries from Barasahi, Haripur, Keranga, Pubu Sahi and Totapada Gram panchayat of Khordha district, Odisha, from 15th January to 18th January, 2026. The program aimed to improve nutrition, livelihood and backyard poultry farming skills among the scheduled tribe community. The beneficiaries were provided with inputs such as grower chicks, chick mash feed starter, feeder and drinker to support the backyard poultry farming.

Various activities under DAPSC program

Various livestock development and animal health support programs were conducted across Puri, Khordha, and Nayagarh districts.

These included input distribution and FMD awareness initiatives aimed at sensitizing farmers on disease prevention and control. Training programs on layer bird farming were also organized to promote scientific poultry practices among beneficiaries. In addition, distribution of cages, layer birds, and poultry feed was carried out to support livelihood enhancement activities. A PPR vaccination program for small ruminants was undertaken in Nayagarh district as part of disease control efforts. Furthermore, health camps along with FMD awareness activities were organized, and poultry feed distribution programs were conducted to strengthen field-level support and improve animal health management practices in the region.

ICAR-NIFMD Participation in Matsya-Pranee Samavesh Odisha, (MPSO-2026)

The Government of Odisha, under the leadership of Hon'ble Chief Minister Shri Mohan Charan Majhi, organized a grand three-day Matsya-Pranee Samavesh Odisha (MPSO-2026) conclave at Janata Maidan, Bhubaneswar, from 21st to 23rd January, 2026. The conclave was held with the objective of strengthening rural livelihoods and promoting prosperity among the farming community across the state, under the theme *"Innovative Interventions in Fisheries and Livestock for Viksit Odisha."* ICAR-NIFMD actively participated in the event by setting up an exhibition stall, where informative literature related to livestock health and FMD management was disseminated among farmers and other stakeholders. In addition, two invited lectures were delivered by Dr R P Singh, Director, ICAR-NIFMD and Dr N R Sahoo, Principal Scientist, ICAR-NIFMD.

Participation in OPFA Annual Meet-2026

Dr N R Sahoo, Principal Scientist of ICAR-NIFMD, participated as the chief speaker for 'Fifth Annual Meet of Odisha Pig Farmers' Association (OPFA) on 18th January, 2026. He highlighted the scope of piggery in Odisha with respect to advanced husbandry practices as well as farm end biosecurity.

Publications

Research Articles

1) Mohapatra JK, Das B, Subramaniam S, Dahiya SS, Rout M, Prusty BR, Singh RP (2025). Full genome-based evolutionary analyses of FMD virus serotype-A including field outbreak strains isolated from India during the period 2008-22. **Virus Evol.** 18;12(1):veaf097. doi: 10.1093/ve/veaf097. PMID: 41573079; PMCID: PMC12821355.
2) Rout M, Pandey LK, Prusty BR, Mohapatra JK, Singh RP (2026). Optimization and evaluation of 3AB3 indirect ELISA for detection of foot-and-mouth disease virus non-structural protein antibodies in sheep. **Virology.** 10;619:110873. doi: 10.1016/j.virol.2026.110873.
3) Patil DY, Sahay RR, Shete A, Velayudhan A, Kaur H, Upadhyay A, Barde P, Deshpande GR, Nalavade UP, Pawar SD, Kanitkar M, Gupta N, Yadav PD and Members of the National network of BSL-3 laboratories (2026). A framework for evaluating biosafety and biosecurity in national network of biosafety level-3 laboratories in India: an initiative under national one health mission. **Front. Bioeng. Biotechnol**. 13:1611648. doi: 10.3389/fbioe.2025.1611648

Popular articles

1. Ranjan R, Biswal JK, Mallick S, Rath SK, Das S (2026). Importance of health management in goat farming. Indian Vet. Mag. 1(1):10–13. doi: 10.5281/ScienceWorld.18174721.
2. Biswal JK, Ranjan RR, Das S (2026). Application of artificial intelligence in vaccine development. Sci. World 6(1):200–207. doi: 10.5281/ScienceWorld.18392466.

Activities beyond Research

ICAR-NIFMD, Bhubaneswar Participation in the ICAR Zonal Sports Meet (Eastern) (TEZ-2025)

The ICAR-NIFMD, Bhubaneswar sports contingent, comprising a total of 14 members, participated in the ICAR Zonal Sports Meet (Eastern) (TEZ-2025) organized by ICAR-CIFA, Bhubaneswar, held from 6th to 9th January, 2026. During the event, the ICAR-NIFMD team actively participated in various sports competitions, including cricket, badminton, table tennis, carom, and athletics.

Celebration of the 77th Republic Day at ICAR-NIFMD, Bhubaneswar

ICAR-NIFMD, Bhubaneswar, celebrated the 77th Republic Day on 26th January, 2026 with great patriotic fervour and enthusiasm. A guard of honour was presented by the institutional security staff, followed by the Director, Dr R P Singh, unfurling the National Flag.

While addressing the gathering, the Director appreciated the dedicated efforts of the institute's scientific and technical teams in strengthening animal health and disease control programs in the country specially FMD control. He also outlined the major achievements of ICAR-NIFMD and encouraged all staff members to continue working with commitment and integrity towards achieving the institute's future goals. On this occasion, the Director felicitated Dr M. Rout and Dr M. Sahoo for publishing research papers in open-access and hybrid high-impact journals, respectively. The program concluded with a vote of thanks and a renewed commitment by all staff members to serve the nation through excellence in research, diagnostics, and disease control initiatives.

Organization of Rashtriya Karmayogi Jan Seva Program at ICAR-NIFMD

ICAR-NIFMD, Bhubaneswar, organised a one-day "Rashtriya Karmayogi Jan Seva Program" on 30th January, 2026 at the Training Block of the institute, Arugul, Bhubaneswar, Odisha. A total of 25 employees from two ICAR institutes participated in the program. Of these, 21 participants were from ICAR-NIFMD, while 4 participants were from ICAR-CIFA, Bhubaneswar. Dr C K Mishra, Principal Scientist, ICAR-CIFA, Bhubaneswar, and Dr S K Rautray, Principal Scientist, ICAR-IIWM, Bhubaneswar, served as master trainers for this important Rashtriya Karmayogi Large Scale Program (Phase-II).

Transfer, Relieving, and New Joining

- Mr S K Jena, joined as Senior Administrative Officer of ICAR-NIFMD on promotion from the ICAR-Indian Institute of Water Management, Bhubaneswar, on 1st January 2026.
- The newly joined scientist, Dr S Nautiyal was relieved from ICAR-NIFMD on 09th January 2026 for Professional Attachment Training (PAT) under the Foundation Course for Agricultural Research Service (FOCARS) at ICAR-NIHSAD, Bhopal.
- Mr A K Mishra, Administrative Officer of ICAR-NIFMD, was transferred to ICAR-Indian Institute of Water Management, Bhubaneswar, and was relieved on 28th January 2026.

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Concept and Guidance: Dr R P Singh, Director

Editorial Committee:
1. Dr Saravanan S, Chairman
2. Dr M Rout, Member
3. Dr M Sahoo, Member
4. Dr S Das, Member
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