

## Institutional updates

### Indian Council of Agricultural Research and ILRI strengthen partnership by signing 2023–2026 agreement

The Indian Council of Agricultural Research (ICAR) and the International Livestock Research Institute (ILRI) have renewed their partnership for collaborative research in livestock research to address poverty and safeguard food and nutritional security in India.

Through a memorandum of understanding (MoU) signed on 28 November 2022 at the ILRI South Asia regional office, New Delhi, the two organizations created a new work plan that will guide research activities between 2023 and 2026. This follows the expiry of the 2019–2022 agreement signed in early 2019.

Under the MoU, both ICAR and ILRI will receive grants from the Department of Agricultural Research and Education (DARE) under Window III for collaborative research-for-development projects in the country.

The new agreement was signed by Dr. Himanshu Pathak, secretary of DARE and director general of ICAR, and Dr. Jimmy Smith, (now former) director general of ILRI. Also present were Dr. Aly Abousabaa, director general of the International Centre for Agricultural Research in the Dry Areas (ICARDA) and CGIAR regional director for Central and West Asia and North Africa; Dr. Temina Lalani Shariff, CGIAR regional director for South Asia; Dr. Bhupendra Nath Tripathi, deputy director general (animal sciences), ICAR; Dr. Habibar Rahman, ILRI regional representative for South Asia; Dr. J.P. Mishra, assistant director general (international relations), ICAR, and other dignitaries.

Dr. Himanshu Pathak said the new MoU will facilitate smooth implementation of shared projects in the next four years. He acknowledged the importance of livestock not only for India but also for the South Asia region and said that ICAR and ILRI would work closely to support new livestock development programs that have been initiated by the Government of India to improve the livelihood security of smallholder farmers.

Dr. Rahman shared details of projects that will be undertaken by the two organizations between 2023 and 2026. These will include the development of vaccines and diagnostics for exotic diseases (e.g. African swine fever, Middle East respiratory syndrome and Rift Valley fever), a Pan India project on controlling methane emissions, initiatives to empower women in the livestock sector, and genomics research on the red jungle fowl.

Dr. Tripathi added that the new work plan would also encourage collaboration between ICAR and ILRI researchers and sharing of research findings to further advance India's livestock sector. Dr. Smith praised the relationship between ICAR and ILRI, saying the two organizations had a long history of working together. He said the priorities in the new work plan will take advantage of the skills and expertise available in each organization.



Himanshu Pathak, director general of ICAR, and Jimmy Smith, (now former) director general of ILRI, signed a memorandum of understanding on 28 November 2022 (photo credit: ILRI/Vijayalakshmy Kennedy).



### Welcome note

Welcome to the tenth edition of ILRI's South Asia newsletter!

This newsletter shares key updates of ILRI's activities in South Asia with stakeholders, partners and donors.

I hope you will enjoy reading it and thank you for your strong support of ILRI South Asia.

Learn more about our work at <https://asia.ilri.org/>. If you have any feedback, please contact [ilri-delhi@cgiar.org](mailto:ilri-delhi@cgiar.org)

**Habibar Rahman**  
Regional representative for  
ILRI South Asia

## ICAR and ILRI directors general inaugurate ILRI's South Asia office

On 28 November 2022, Himanshu Pathak, secretary of DARE and director general of ICAR, and Jimmy Smith, ILRI's (now former) director general, inaugurated the ILRI South Asia office.

ILRI has been working in India since 2004, renting offices in different premises. But in June 2020, the institute was allocated office space at the National Agricultural Science Complex (NASC) in New Delhi through the efforts of the then ILRI director general and ILRI regional representative in South Asia, Habibar Rahman, with valuable support from former DARE secretary and ICAR director general Trilochan Mohapatra.



Himanshu Pathak, secretary of DARE and director general of ICAR, and Jimmy Smith, (now former) director general of ILRI, inaugurate the ILRI South Asia regional office (photo credit: ILRI/Vijayalakshmy Kennady).

## Project news

### Experts explore measures to curb spread of African swine fever in northeastern India

Animal health experts convened a regional workshop to design a comprehensive disease management plan for African swine fever (ASF) in response to the negative impacts of the disease on the livelihoods of millions of farmers in northeastern India. The meeting was held on 8 July 2022 in Assam State.

Participants from the northeastern states reviewed the status of ASF in the region, difficulties in controlling the disease and recommendations to improve its management. A later session discussed ASF control planning and related policy needs.

Key proposals included improving diagnosis and surveillance, culling animals on infected farms followed by cleaning and disinfection, tightening biosecurity measures, raising farmers' awareness, and developing the capacity of field veterinarians and commercial pig breeders in biosecurity, ASF management activities and good animal husbandry practices. Other suggestions were issuing movement restrictions, sanctioning trade in pigs and pork products, and boosting vaccine research and development.

The workshop was co-hosted by the Animal Husbandry and Veterinary Department (AHVD), the Assam Rural Infrastructure and Agricultural Services (ARIAS) Society, ILRI, the Department of Animal Husbandry and Dairying (DAHD) and the Ministry of Fisheries, Animal Husbandry and Dairying (MoFAHD).

It was attended by 60 livestock and animal health experts, including officials from Nagaland, Meghalaya and Mizoram and representatives from DAHD, ICAR, Assam Agricultural University (AAU), ILRI, the Food and Agriculture Organization of the United Nations (FAO) and the World Bank.



Group photo of ASF workshop participants with Atul Bora, minister for Agriculture and Animal Husbandry, Government of Assam (middle, with scarf) (photo credit: ILRI South Asia).

### National forum assesses status and economic benefits of donkeys and mules in India

On 10 October 2022, the 'Mapping the issues of Indian donkey and mule population and identify the potential intervention strategies and partnership' project organized a national stakeholder meeting on the 'Status of donkey and mule population and their dependent communities in India' in New Delhi. Among the recommendations from the discussion were that:

- Special emphasis be given to donkey milk and the development of a cooperative model for the promotion of donkey milk producers.
- All the potential stakeholders be brought together to work in donkey research, including ICAR, DAHD, MoFAHD, the government, non-governmental organizations and donkey sanctuaries.
- A National Donkey Production Program be established for the welfare of donkeys.
- Food Safety and Standards Authority of India certification be applied to donkey milk.
- An artificial insemination program be started for donkeys with relevant subsidies.
- Indigenous donkeys be given attention to improve breeds, expand the population and develop donkey and donkey-product export markets.
- Medicinal and cosmetic properties of donkey milk be fully utilized through economic analysis and appropriate extension techniques.

ILRI and partners will use the data generated from this project to create guidelines for donkey production, management and breeding in India. The research will also strengthen market linkages and value addition in the donkey sector.

This project is funded by the Donkey Sanctuary, UK, an international animal welfare and rescue charity that is transforming the quality of life for donkeys, mules and people worldwide. The sanctuary operates major projects in Egypt, Ethiopia, India, Kenya and Mexico.

## Partners review implementation progress of Bihar's livestock master plan

Livestock sector stakeholders and partners in Bihar, India, met to review the implementation of the state's livestock master plan (LMP) three years after its launch. The 8 October 2022 meeting at the Bihar Animal Sciences University (BASU) in the state capital, Patna, brought together close to 50 participants from the Department of Animal and Fisheries Resources (AFRD), BASU, the Government of Bihar and ILRI.

Launched in January 2019, Bihar's LMP was the first for an Indian state. The review assessed how the master plan has been received and implemented by target stakeholders, the achievements so far, the challenges experienced and ways of addressing them.

Bihar's LMP was developed by the Government of Bihar and ILRI based on the Bihar Livestock Sector Analysis, which was also produced by the state government and ILRI. The work was supported by the Bill & Melinda Gates Foundation.

## India's Odisha State launches master plan to spur livestock sector investment and growth

The Odisha State Government's Fisheries and Animal Resources Development Department launched its LMP on 12 October 2022 at the office of the Fisheries and Animal Resources Development Department. Suresh Kumar Vashisith, commissioner-cum-secretary of the Government of Odisha, officiated the launch.



Representatives of government and partner institutions at the official release of Odisha State's livestock sector analysis (photo credit: ILRI/Braja Bandhu Swain).

The Odisha LMP, whose development was initiated by ILRI in 2020, is a detailed plan for enhancing investment in the state's livestock sector. This plan includes a baseline livestock sector analysis, a 15-year livestock sector strategy and a five-year sector investment plan. Included in the sector investment plan is a financial and human resource analysis as well as a budget to guide the development of a sustainable livestock sector for a state or country.

The development of the Odisha LMP was funded by the Bill & Melinda Gates Foundation through Samagra Governance (a governance consulting firm) and was undertaken by a joint team of experts from Odisha government institutions and ILRI.

## Capacity development

### ICAR and ILRI hold training to boost poultry production for India's food security

ILRI and ICAR co-hosted a training course to improve the technical capacity of scientists and veterinary staff in poultry sector development. Twenty-five participants from across India attended the 20–24 September 2022 course titled 'Advanced biotechnological approaches to augment productivity in poultry for ensuring food and nutritional security' at ICAR's Directorate of Poultry Research (ICAR-DPR) in Hyderabad.



Himanshu Pathak, ICAR's director general, presents a certificate to a training course participant (photo credit: ILRI/Roma Oli).

The five-day course covered the following topics:

- The animal production context in India
- Poultry as experimental animals and their rearing practices
- Backyard poultry production
- Genomics of poultry and current scenario in the world
- The poultry production system in India
- Genome sequencing approaches
- Illumina-based genome sequencing
- Development of Single Nucleotide Polymorphisms chip
- Genome data handling
- SNP analysis
- Genome-wide marker-assisted selection
- Transgenic approaches in animals
- Stem cell research in animals
- Genome editing through gene knock-in technology
- Other genomic technologies useful in animal research

Practical sessions, which were held at the ICAR-DPR laboratories, included techniques for cell culture for *E. coli*, fibroblast cells and PPAR Gamma Coactivator (PGC), gene cloning, transfection experiments and sperm-mediated gene transfer. Participants also had the opportunity to perform tests on protein expression, protein isolation and purification, detection of proteins through SDS-PAGE, western blotting and ELISA, and genome editing in chicken.

## Guru Angad University and ILRI training to improve buffalo fertility in Nepal

ILRI and the Guru Angad Dev Veterinary and Animal Sciences University (GADVASU) trained 15 Nepalese researchers from the Nepal Agricultural Research Council Livestock Service Section and the Directorate of Livestock Services' Veterinary Hospital and Livestock Expert Centre on improving fertility in buffaloes. The training was held from 28 November to 6 December 2022 at GADVASU in India's Punjab State.



Copies of the training compendium by the dignitaries (photo credit: ILRI/Vijayalakshmy Kennady).

At least 15 experts from GADVASU and ILRI conducted training on topics including hastening puberty, understanding the influence of seasonality on buffalo reproduction, nutrition and reproduction interaction, mitigating stress for optimum productivity, follicular dynamics, synchronization of oestrus, repeat breeding, infectious infertility, uterine defence modulation, functional infertility–cystic ovarian degeneration, handling of uterine prolapse, retention of placenta, handling of dystocia, evaluation of bull fertility, and management of breeding bulls. Other topics included use of sex-sorted semen, semen cryopreservation, updates on multiple ovulation embryo transfer, in vitro fertilization and ovum pick

up (OPU) techniques as well as organization of village-level animal welfare camps.

The participants gained practical skills in heat detection methods, ultrasonography and colour doppler of reproductive organs/pregnancy diagnosis, IVF-OPU, ultrasonography-guided follicular ablation, use of estrous detectors, breeding soundness evaluation, use of electroejaculator, infrared thermography, back fat analysis using ultrasonography, and semen collection and freezing. They also learned the precautions to take during handling and transport of frozen semen, and computer-aided semen evaluation.

The training included visits to dairy farms to weigh adoption of new techniques vis-a-vis entrepreneurship and expose participants of large and small animal clinical cases at the university veterinary hospital. It was organized under the CGIAR Initiative on Sustainable Animal Production (SAPLING).

## New projects

1. Development of vaccines for prioritized exotic and emerging animal diseases
2. Assessment of spatio-temporal variation in enteric methane emissions and development of primary data-based inventor
3. Gender-Livestock-Climate Analytic Approach (GLCAA) for livelihood improvement in distressed areas of India
4. Pangenome analysis and identification of selection signatures for conservation of red jungle fowl (All four projects are funded by ICAR (Government of India under Window – III) for the period 2023–2026.)



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