ILRI South Asia newsletter

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Institutional updates

ILRI launches livestock research for development programs in Nepal

The International Livestock Research Institute (ILRI) has officially launched its programs in Nepal.

Bimal Kumar Nirmal, acting secretary in Nepal's Ministry of Agriculture and Livestock Development (MoALD), officially launched ILRI's livestock research programs in the country on 23 April 2021 at an inception meeting hosted by ILRI and MoALD in Kathmandu.

Hosted by the International Rice Research Institute (IRRI) at Khumaltar, Kathmandu, the new ILRI-Nepal office started operations in January 2021, marking an important step towards ILRI's increased presence and engagement in the country. The new office will strengthen the institute's partnerships with national and regional partners in South Asia to provide science-based evidence to decision makers, facilitate scaling of proven livestock management practices and strengthen the capacities of key stakeholders in Nepal.

The ILRI-Nepal office is headed by Padmakumar Varijakshapanicker, senior research management coordinator at ILRI, who serves as the Nepal country representative in charge of coordinating ILRI's research in the country.

ILRI has been working in Nepal for a while. It started with the Cereal Systems Initiative for South Asia (CSISA) project in 2013, which focused on the improvement of crop residues as livestock feed. Besides, ILRI has been coordinating the Feed the Future Innovation Lab project activities in Nepal for the last five years. In the future, ILRI will continue to coordinate the already approved United States Agency for International Development-funded Phase II (2019 to 2024) activities in Nepal.

The livestock sector contributes around 13.5% of Nepal's national gross domestic production (GDP), 50% to agricultural GDP, and engages 60% of the rural people.

'We view goat production, dairy and poultry production as key pathways out of poverty for Nepali farmers,' said secretary Nirmal. He also pointed out some challenges that the country is facing in low livestock productivity, weak value chains, animal health problems, food and fodder scarcity, breeding and genetics, and food safety.

ILRI has already developed plans in Nepal with national and regional research organizations, private sector players, government, and non-governmental organizations that identify the priorities for collaborative livestock research for development work in the country.

'We are working for the betterment of the livestock sector in Nepal by focusing on several key areas including animal genetics, feed-based intensification, animal health, food safety, One Health, value chain development and livestock investment capacity development,' says Padmakumar.

Speaking via video at the meeting, Iain Wright, ILRI deputy director general, said 'self-sufficiency in animal-sourced foods is one of the main visions of the Government of Nepal, and we are committed to helping the government in realizing this vision. ILRI looks forward to greater collaboration with national and international partners.'

In closing remarks, Hari Bahadur K. C, joint secretary (planning and foreign aid) at the MoALD, said the government will support ILRI's research programs in line with the country's priorities. He said ILRI will be playing a key role in capacity development towards improving and modernizing the livestock sector. Damayanti Shrestha, director general, Department of Livestock Services, added that the ministry is eager to work with ILRI and support the new partnerships that will result from ILRI's engagement with stakeholders in the country.

Welcome note

Welcome to the seventh 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 to ILRI South Asia.

Learn more about our work at www.asia.ilri.org. If you have any feedback please contact ilri-delhi@cgiar.org

Habibar Rahman
Regional representative for ILRI South Asia

Winning, ‘climate-smart’, ways to feed India’s dairy cows—Jimmy Smith of ILRI

Jimmy Smith, director general of ILRI spoke on 27 May 2021 at the 8th Research Advisory Committee meeting of India’s National Dairy Development Board. Smith’s slide presentation focused on India’s fast-rising demand for dairy products, the dominance of smallholders in the country’s dairy sector, and the smart (and ‘climate-smart’) dairy feeds that will be needed to grow India’s dairy sector. The commodity value of India’s dairy market, Smith said, is high—it was around 11,360 billion Indian rupees (INR) in 2020 and is predicted to almost double—to around INR21,971 billion—by the year 2024. While most of the dairy farms in India keep fewer than 10 animals, Smith argued that these small-scale producers are big producers in aggregate. Farmers on less than 20 hectares of marginal and other land, he said, produce nearly 50% of the world’s livestock and cereal products globally, a percentage that rises to almost 70% in the world’s developing and emerging economies.

ICAR-CGIAR review meeting assesses the progress of ICAR-ILRI collaborative projects

The Indian Agricultural Research Institute (ICAR) hosted a virtual review meeting on 3–4 February 2021to review collaborative projects between ICAR and CGIAR centres in India. Habibar Rahman, ILRI regional representative in South Asia, gave an overview of the progress and achievements of on-going ICAR-ILRI collaborative projects undertaken in 2020. Regarding to the ICAR-ILRI collaborative project on backyard poultry genomics, Trilochan Mohapatra, secretary, Department of Agricultural Research and Education (DARE) and director general of ICAR, stated that the project was initiated by keeping in view the strength of ILRI in poultry genomics. The project expects to carry out genomic selection of at least one high-breeding poultry variety and continue to develop the capacities of ICAR scientists in research. He expressed his satisfaction with the progress of ICAR-ILRI projects even during the COVID-19 pandemic. Bhupendra Nath Tripathi, ICAR’s deputy director general for animal sciences, said that the objectives of all four ICAR-ILRI collaborative projects have almost all been met on time. He suggested developing the action plan for ICAR-ILRI collaboration on exotic diseases research. Mohapatra praised the work done by different CGIAR centres in India noting that available technologies from CGIAR research in the country should be scaled up. Besides ILRI, other CGIAR centres– International Council for Research in Agroforestry (ICRAF), International Water Management Institute (IWMI), International Center for Agricultural Research in the Dry Areas (ICARDA), International Maize and Wheat Improvement Center (CIMMYT), Bioversity Alliance, International Center for Tropical Agriculture (CIAT), International Rice Research Institute (IRRI), International Rice Research Institute (CIP), WorldFish, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)– also joined the meeting to share the progress of their projects.

Project news

ILRI releases training manuals on best practices for strengthening livestock value chains in Assam, India

ILRI released a set of training manuals on best practices for improving the quality and safety of informal dairy and pork value chains in Assam, India, at the 2021 Livestock and Poultry Show in Guwahati, 8–10 February 2021.

Ram Pratim Deka, senior scientist at ILRI, presented the set of seven manuals to Sarbananda Sonowal, the chief minister of Assam and the political head of the state, who launched them at the event. The seven manuals are:

1. Training manual for milk sweet makers
2. Training manual for milk cottage processors
3. Training manual for pork retailers
4. Lab protocol for conducting pork safety test
5. Lab protocol for conducting milk safety test
6. Handbook for reproductive health and mastitis management for farmers (in Assamese)
7. Protocol for reproductive health and mastitis management for field veterinarians

These documents were developed by ILRI under the World Bank-funded Assam Agribusiness and Rural Transformation Project (APART) under which ILRI is serving as a knowledge partner to the Animal Husbandry and Veterinary Department (AHVD), Government of Assam. The project’s goal is to improve the quality and safety of livestock products in the informal sector.

The seven training manuals were developed after training needs assessments of the dairy and pork value chain actors in the state. The manuals are written in simple and clear language and contain photographs and illustrations to make them understandable to target groups, which include value chain actors and livestock farmers in the state and elsewhere.

A set of seven training manuals on best practices for improving the quality and safety of informal dairy and pork value chains are released at the Livestock and Poultry Show 2021 in Assam, India (Photo credit: ILRI)

A PCR assay developed for identification of Nicobari native chicken under ILRI-ICAR collaborative project on backyard poultry genomics

A collaborative effort by ICAR and ILRI has been exploring the molecular signature of Indian native chickens to explore breed specific identity. The whole genome sequence of 10 Indian native chicken breeds (Aseel, Ghagus, Nicobari, Kadaknath, Hansli, Mewari, Punjab brown, Ankleshar, Harringhata black and Tellichery) and two synthetic high-yielding exotic chickens (Broiler and Layer types) was explored under the Illumina Novaseq Next-generation Sequencing (NGS) platform at 10X coverage.

Breed identification is an important task in any livestock and poultry species for many purposes including breed characterization and improvement, breed registration, pure line breeding, admixture analysis, forensic analysis and traceability.

This point mutation was detected with an allele specific PCR assay, which confirms the Nicobari breed from the pool of Indian native (Aseel, Ghagus, Nicobari, Kadaknath, Hansli, This PCR assay will be useful for accurate identification of Nicobari native chicken without looking at the phenotypes of the breed. In future, breed specific PCR assay for other Indian native breeds will be explored for accurate identification of Indian native chicken breeds.

ILRI joins the Agri-Horti Show 2021 and Livestock and Poultry Show 2021 in Assam

In January and February 2021, ILRI participated in the Agri-Horti Show 2021 organized by the Assam government's Department of Agriculture and the Department of Horticulture; and the Livestock and Poultry Show 2021, which was organized by the Department of Animal Husbandry & Veterinary and Assam Livestock and Poultry Corporation (ALPCo). ILRI shared its knowledge products produced in Assam with participants and participated in interactive programs with the farmers. Thousands of farmers, entrepreneurs, agricultural and livestock professionals visited both the events.

ILRI Guwahati team at the Livestock and Poultry Show 2021 (photo credit: ILRI).

Evaluating the impact of 'Harit Dhara' feed supplement on cow methane emissions

India has 192, 109, 74 and 148 million cattle, buffalo, sheep, and goats, respectively. Approximately 85% of the total livestock population in the country is owned by landless and marginal farmers. Methane, a potent greenhouse gas (GHG) contributes approximately 30% to the global GHG emissions. In addition to global warming, methane emission from livestock accounts for a substantial energy loss (6-12%).

'Harit Dhara,' an anti-methanogenic feed supplement developed by the ICAR National Institute of Animal Nutrition and Physiology (NIANP) in Bengaluru, was tested under the ILRI-ICAR collaborative project on methane emission and its mitigation in sheep to assess the supplement's capacity to reduce methane emissions. Results from the in vivo study revealed a significant ($p<0.001$) reduction (21.7%) in enteric methane emission from supplementation of Harit Dhara at 5% level in finger millet straw and concentrate-based animal diets. There was no adverse impact of the anti-methanogenic supplement on the feed intake, nutrient digestibility and blood biochemical profile. Using Harit Dhara as a supplement in the feed significantly reduced total protozoa, entodiniomorphs and holotrichs population in the rumen of sheep.

Mixing of Harit Dhara with the concentrate mixture (photo credit: ILRI).

Assam State officials visit ILRI-supported milk testing laboratory

Atul Bora, Minister for Agriculture, Horticulture, Animal Husbandry & Veterinary, Government of Assam, visited the milk testing laboratory of the Dairy Development Department, Government of Assam on 19 February 2021. ILRI provides technical support to some of the labs activities. ILRI's Ram Pratim Deka spoke of the importance of milk quality and safety and how this laboratory and network of another four milk testing laboratories plays a pivotal role in assessing the physical, chemical and microbiological quality of milk. He said the network can help the department in minimizing health risks by assuring farmers and consumers of milk quality and safety. Later, Jishnu Baruah, the chief secretary, and Shyam Jagannathan, commissioner and secretary, Animal Husbandry and Veterinary Department, Government of Assam, also toured the facility on 11 March 2021. They

appreciated ILRI's role in strengthening milk safety in the state.

Jishnu Baruah, chief secretary, Government of Assam (third from right) visits ILRI-supported milk testing laboratory (photo credit: ILRI).

Assam establishes Joint Coordination and Monitoring Committee to address milk and pork safety

ILRI has been working with the Dairy Development Department (DDD), Government of Assam, for the past few years to constitute an inter-departmental Joint Coordination and Monitoring Committee (JCMC) to address the risk of milk-borne and zoonotic diseases posed by the informal dairy value chain. Last year, ILRI gave a major push to the initiative by drafting all background documents for constituting such a committee using One Health approach. Accordingly, the Government of Assam constituted a JCMC under the chairmanship of Shyam Jagannathan commissioner and secretary, Animal Husbandry and Veterinary Department (AHVD), Government of Assam, to address milk and pork safety and zoonotic disease following the Government Order VFV/297/2020/17 of 23 December 2021. Members of the committee include the director, AHVD; director, DDD; joint director, Health Services; state food analyst, Food Safety and Standard Authority of India; joint commissioner, Guwahati Municipal Corporation; general manager, National Bank for Agriculture and Rural Development (NABARD) and associate director (Extension), Assam Agricultural University. Ram Pratim Deka was also appointed as a member to technically backstopped the committee. A similar committee has also been constituted at the district level under the leadership of the District Commissioner vide Government order No. VFV/297/2020/18 of 23 December 2021.

Developing strategy for controlling African swine fever in Assam

In partnership with the AHVD, Government of Assam, ILRI organized a meeting to discuss the African swine fever (ASF) control and rejuvenation plan of the pig sector in the affected areas on 20 February 2021. The event was chaired by Shyam Jagannathan, commissioner and secretary, AHVD, Government of Assam and facilitated by ILRI's Ram Pratim Deka. The meeting was attended by senior officials of AHVD, representative from ICAR-National Research Center on Pigs (NRCP), Assam Agricultural University (AAU), the World Bank, ILRI and representative of farmer groups. The representatives from the World Bank, the Food and Agriculture Organization of the United Nations (FAO0 and ILRI drafted a comprehensive action plan to address ASF in the state. The document was presented by the World Bank to the Government of Assam.

ILRI

The International Livestock Research Institute (ILRI) works to improve food and nutritional security and reduce poverty in developing countries through research for efficient, safe and sustainable use of livestock. Co-hosted by Kenya and Ethiopia, it has regional or country offices and projects in East, South and Southeast Asia as well as Central, East, Southern and West Africa. ilri.org

CGIAR

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Patron: Professor Peter C Doherty AC, FAA, FRS
Animal scientist, Nobel Prize Laureate for Physiology or Medicine–1996

Box 30709, Nairobi 00100 Kenya
Phone +254 20 422 3000
Fax +254 20 422 3001
Email ilri-kenya@cgiar.org

ilri.org
better lives through livestock

ILRI is a CGIAR research centre

Box 5689, Addis Ababa, Ethiopia
Phone +251 11 617 2000
Fax +251 11 667 6923
Email ilri-ethiopia@cgiar.org

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