

Sectoral strategy, programs, flagship projects and action plans: Departmental Vision cum Roadmap for Development of Animal Husbandry and Veterinary Sector in the State of Assam, India

Excerpts of Final Report submitted to:

Department of Animal Husbandry and Veterinary Government of Assam

By

Vet Helpline India Pvt Ltd

Preparation of Departmental Vision cum Roadmap for Development of Animal Husbandry and Veterinary Sector in the State of Assam – An initiative commissioned by:

অসম চৰকাৰ



Department of Animal Husbandry and Veterinary Government of Assam https://veterinary.assam.gov.in/ November 2018

Prepared by:



Vet Helpline (India) Pvt Ltd 31/32, Milanpur, Chandmari, Guwahati-781021, Assam, India Phone: +91-361-2651593 E-mail: info@vethelplineindia.co.in http://www.vethelplineindia.co.in/

Contents

Contents	2
Sectoral goal and strategy	3
Cattle Sector	3
Fodder and Feed Sector	3
Dairy Processing Sector	4
Piggery sector	5
Goat Sector	
Poultry Sector	
The general framework of Programs:	7
Flagship Projects	7
The Basic Sectoral Action Plans	19
Cattle Sector	19
Piggery Sector	
Goat Sector	
Poultry Sector	

Sectoral goal and strategy

Cattle Sector

Goal 2030:

- 1. To achieve a vibrant dairy value chain (Commercial / Traditional) for sustainable/competitive production, value addition, ensuring local income generation and safe, affordable milk and milk products for consumers.
- 2. To ensure 100% animal identification of crossbred animals in cluster areas for productivity, herd health and traceability of milk and milk products.
- 3. To achieve effective control over diseases in cluster areas for known cattle diseases.

Strategy:

- 1. Strengthening of large animal veterinary service with mobile preventive / on-call facility aimed at DCS areas.
- 2. Strengthening of A I services with farmer awareness about requirement for the success of crossbreeding, support for the calf to heifer rearing, skill training of AI workers, campaign for infertility management.
- 3. Renewed focus on *Khutis* and support for farming with indigenous animals to produce branded A2 milk. (Rejuvenated government farm to promote selective breeding of swamp buffalo for distribution to *Khutis* for addressing the inbreeding problem)
- 4. Strengthening of extension campaign for good dairy farming practices (including scientific feeding and clean /safe milk production)
- 5. Promotion of cattle by-product utilization for enhanced farmer income.
- 6. Rejuvenation of government farms for the supply of heifer to beneficiaries and incubation of dairy farming related enterprise.
- 7. Promotion of private enterprise for modern cattle breeding, data management, herd health-related services.
- 8. Efficient disaster response to protect dairy cattle at the time of distress. (e.g. Feed and fodder stocking at government facilities)
- 9. Training master dairy farmers and farm supervisors through departmental and private facilities.
- 10. Setting up of private advisory services to help the growth of modern farm enterprises.

Fodder and Feed Sector

Goal

- 1. To rejuvenate 80% of government fodder farms by 2030 to produce green fodder for distribution to farmers and stock for disaster.
- 2. To support one model farm under public-private partnership for certified fodder seed production and high-end fodder technology demonstration.

- 3. To support a minimum of three government farms for promotion of innovative technologies such as Azola cultivation, Hydroponics and Silage production.
- 4. Distribute fodder seeds to beneficiary farmers with an objective to ensure adoption of the practice of green fodder cultivation.
- 5. Conduct a techno-feasibility assessment of defunct feed mills for revival.
- 6. To improve the feed regulatory situation and thus promote local enterprise.

Strategy

- 1. Emphasis on the promotion of fodder cultivation (green) in mapped / potential areas through the facilitation of seed availability.
- 2. Institutional fodder production in idle land in the department. (Through the execution of model MoU between government facility and SHGs / FIGs to cultivate fodder in departmental land)
- 3. Bringing of government fodder farms under appropriate institutional control for smooth fund flow based on year-wise action plan taking care of needs like Fencing, Reimbursement of tractorization cost, irrigation facility etc.
- 4. Convergence with agriculture, forest department and panchayat with formal MoU. (e.g. Maize cultivation, coarse grain under National Food Security Mission (NFSM), Pasteur development, agroforestry and community fodder bank)
- 5. Streamlining of National Livestock Mission (NLM) funding for expenditure under Feed and Fodder Submission for the supply of chaff cutter, feed block, hydroponic facility etc. to DCSs.
- 6. Improvement in regulatory control of feed production and trading.

Dairy Processing Sector

Goal 2030

- 1. To achieve formal dairy sector growth through vibrant farmer level institutions and private enterprise in milk procurement, processing and marketing.
- 2. To ensure safe and traceable milk and milk product for consumers.
- 3. To integrate the informal sector (including cottage milk processing)

Strategy

- 1. Support for the formation of DCSs and assistance for scientific milk procurement.
- 2. The revival of infrastructure under the Town milk Supply Schemes for giving a platform to private peri-urban dairies / Select DCSs to produce milk products with support for brand building.
- 3. Linking of promoted dairy cooperatives with Animal husbandry department and other private service providers for focus veterinary and other related services as per annual contract.
- 4. Setting up of milk cost and standard committee for cost related data collection, analysis and declaration of milk price geographical region/farming system wise.

- 5. Supervision of governance of dairy cooperatives and support for the formation of the federation at various levels depending on the scale of aggregated production.
- 6. Support for the informal sector and cottage milk processing (e.g. Adoption of technologies for standardization and scaling up of production of dairy products in cottage processing sector)
- 7. Enhanced partnership for regulatory actions to ensure quality, the safety of milk and milk products and control of related illegal market practices.

Piggery sector

Goal

- 1. To achieve a vibrant pork value chain for sustainable/competitive production, value addition, ensuring local income generation and safe, affordable pork and pork products for consumers.
- 2. To ensure 100% commercial pig farm premise identification in cluster areas for biosecurity planning, targeted herd health monitoring and improved trade of pork with traceability.
- 3. To achieve effective control over diseases in cluster areas for known pig diseases.

Strategy

- 1. Strengthening of small farm animal veterinary service with provision for the supply of de-wormers and iron supplementation to address piglet anaemia.
- 2. Increase quality vaccine supply and targeted vaccination campaign.
- 3. Mandatory premises registration of commercial pig farms for bio-security, public health support, targeted preventive care and traceability of pork.
- 4. Promotion cross-breeding (Through AI) with elite germplasm.
- 5. Setting up of nucleus farms for planned breeding stock supply to registered multiplier farms. (Government / Private sector)
- 6. Promotion of feeding of 'modern pig feed' to produce lean pork suitable for processing.
- 7. Piglet distribution to women SHGs and promotion of contract farming / Pig bank concept¹.
- 8. Support to nomadic tribes rearing local pigs.
- 9. Promotion of private-sector driven initiative in pork processing and by-product utilization.
- 10. Promotion of scientific slaughter and hygienic retailing of pork.

Goat Sector

Goal 2030

- 1. To achieve a vibrant Goat value chain for sustainable/competitive production, value addition, ensuring local income generation and safe, affordable goat meat for consumers.
- 2. To ensure 100% commercial goat farm premise identification in cluster areas for biosecurity planning, targeted herd health monitoring and improved trade of goat with traceability.

¹ A system seen in some parts of Assam where people invest on live pigs being reared at farmers' place under the supervision of organization (pig bank) promoting the investment.

3. To achieve effective control over diseases in cluster areas for known goat diseases.

Strategy

- 1. Strengthening of small farm animal veterinary service with provision for the supply of suitable dewormers to village goat population.
- 2. Increase quality vaccine supply and targeted vaccination campaign.
- 3. Mandatory premises registration of commercial goat farms for bio-security, targeted preventive care, trade facilitation with traceability.
- 4. Promotion of Artificial insemination for selective breeding of local Assam Hill Goat.
- 5. Rejuvenation of government goat farms as nucleus breeding farm of Assam Hill Goat and for augmentation of entrepreneurship.
- 6. Support for goat breeder association / independent breeding farms.
- 7. Support to producer groups for feed resource planning in goat concentration areas.
- 8. Kid distribution to women SHGs
- 9. Promotion of contract farming.
- 10. Promotion of scientific slaughter and hygienic retailing of goat meat.

Poultry Sector

Goal 2030

- 1. To achieve a vibrant poultry value chain (Commercial, Low input birds and local chicken) for sustainable/competitive production, value addition, ensuring local income generation and safe, affordable chicken for consumers.
- 2. To ensure 100% commercial poultry farm premise identification in cluster areas for biosecurity planning, targeted flock health monitoring and trade facilitation.
- 3. To achieve effective control over diseases in cluster areas for known poultry diseases.

Strategy

- Support for development of suitable infrastructure for effective bio-security control in cluster areas, quick laboratory diagnosis of diseases and business continuity planning within the commercial poultry sector.
- 2. Promotion of value chain critical operations, e.g. breeding farms, poultry feed/feed supplement manufacturing and trading, poultry manure utilization etc.
- 3. Distribution of Low Input Technology birds/duck and other poultry to women SHGs.
- 4. Promotion of co-operatives of small farms and streamlining of contract growing operations through the adoption of appropriate law.
- 5. Modernization of wet chicken market, value addition and generic promotion for increased consumption of processed chicken.

6. Support for the formation of a state-level federation of producer groups for collective actions to maintain ethical market practices and to ensure industry level monitoring of risky practices.

The general framework of Programs:

Towards fulfilment of the mission, the Department of Animal Husbandry and Veterinary should thrive to mobilize resources for the following programs under state plan in the next 12 years. Where needed, the central sector programs can be implemented under the category of special programs.

The state plan projects may flow from the following 7 long term programs:

- A. Buniyaad: Infrastructure strengthening and organisational reform.
- B. Prahari: Re-oriented veterinary and breeding service delivery that focuses on planned animal productivity improvement and preventive health. (Service provider acting as Sentinel or Prahari to ensure productivity and prevention of incidence of diseases)
- C. Sahayog: Intersectoral collaboration for disease control, climate change and disaster mitigation.
- D. Upolobdho: Availability of appropriate technology, skilled manpower and quality farm input.
- E. *Utpadan*: Facilitation of livestock production, marketing and trade.
- F. *Jibon dhara aru hohai*: Livelihood and disaster support program focusing on poverty alleviation, family nutrition and health.
- G. *Pranali*: System setting for improved regulatory functions related to public health, food safety, animal welfare and conservation of animal resources.

Flagship Projects

The following are suggested flagship projects. Detailed project proposals with financial outlay will have to be developed in consultation with partners indicated for each case.

Project: 1

Project Name: Assistance to women for livestock-based livelihood and nutrition (Surovi)

Aligned program Name: Jibon dhara aru hohai

Functional Area of department/account head: Promotion of livestock ownership, Livestock/poultry breeding support.

Project justification: Doubling of farmers income and Sustainable Development Goal

Project location: Agriculturally less developed panchayats / urban settlement as per consultation with District Agriculture Office / Municipal authorities.

Description: It is a livelihood support program for economically poor rural women. The program will additionally support the growth of local breeding farms as demand for farm animals will go up.

Goal:

(1) Enhance family income and improved nutrition.

(2) Demand-side support for the growth of local breeding farms.

Project implementation: Through PRIs, Village Development Councils, NGOs (for urban settlements)

Project partner: Assam State Rural Livelihood Mission, National Rural Health Mission and any National / International NGOs supporting last mile delivery of vaccines and livestock health products.

Project component:

- 1. Grant support and bank linkage to breeding farms in each panchayat of select rural areas / peri-urban area for select urban settlement.
- 2. Asset ownership to select women member. (Asset, in this case, will be small ruminants, pig and improved poultry)
- 3. The convergence of rural development schemes for support to needed infrastructures, local resource management for farm input availability, e.g. Small-scale incubators, planting of fodder trees in fallow land etc.
- 4. Linking of beneficiaries to existing / new SHGs / Microcredit organizations.
- 5. Community-level training program on family nutrition and primary health care targeting at families of beneficiary women farmers.
- 6. Free vaccination and deworming support to beneficiaries.
- 7. Support to homestead gardening (including cultivation of suitable ethnoveterinary plants) at the residence of beneficiary women.

Project outcome:

- Improve family income and reduced poverty thereof.
- Improved family nutrition status.
- Availability of livestock products within villages. (Assuming the situation of surplus production by beneficiaries)
- Growth of local breeding farms assisting the project to supply animals to beneficiaries.

Project: 2

Project Name: Assistance to breeders for calf rearing (*Gobardhan*)

Aligned program: Utpadan

Functional Area of department/account head: Promotion of livestock ownership, Livestock/poultry breeding support.

Program justification: Support to A I program.

Program location: Identified dairy clusters, preferably in areas adjoining to A I Centres.

Description: It is a cattle breeding support program to give a boost to the ongoing artificial insemination program.

Goal: Increased number of healthy and quality crossbred heifers

Program implementation: Through FPOs / DCSs and MPIs

Program partner: Dairy Development Department

Program component:

- 1. Awareness campaign on female calf care and heifer rearing.
- 2. Cash incentive for induction to calf rearing program and on the successful marketing of pregnant heifers.
- 3. Free Identification of new born crossbred calf with breeding records.
- 4. Fixed period grant support to FPO /DCS / MPO promoted feed mills to produce standard calf ration and their marketing to beneficiaries.
- 5. Insurance for new born calf (with premium subsidy).
- 6. Health/extension camps for calf care.
- 7. Online marketing of identified heifers with breeding records.

Program outcome:

- Reduced calf mortality.
- Improved availability of quality dairy animals to farm with.
- Enhanced farmer income through the sale of heifers.
- Increased adoption of Artificial insemination technology.

Project: 3

Project name: Livestock based food safety for public health

Aligned Program Name: Pranali

Functional Area of department/account head: Epidemiology, disease control and Public Health

Project justification: Food safety and pharmacovigilance landscape and associated risk, e.g. Drug and Anti-Microbial Resistance, bio-threat etc.

Project location: Production clusters and Identified risky areas.

Description: The program aims at ensuring the safety of livestock products.

Goal:

- 1. Prevention of production and sale of sub-standard milk and meat. / value-added products thereof.
- 2. Demand creation for safe branded livestock products.

Project implementation: Through a team created based on the interagency framework agreement. The framework agreement will specify the role of partners, sharing of resources, the scope of joint field/laboratory investigations and enforcement of regulations.

Program partner: Commissionerate of Food Safety, Dairy Development Department, Livestock Product Technology Department and Department of Pharmacology & Toxicology at of CVSc, AAU and relevant consulting firm.

Project component:

- 1. Infrastructure and manpower assessment at identified partner laboratories and public investment mobilization for bridging the gap in infrastructure and manpower capacity (if any).
- 2. Commissioned studies to assess the average standards of indigenous and crossbred cattle milk in Assam along with a baseline study of average microbiological quality of locally produced milk.
- 3. Development of a system for dynamic risk mapping (milk and meat) based on sample test data generated at State Public Health Laboratory, a laboratory at the College of Veterinary Science, AAU and facility at NERDDL.
- 4. Training of veterinary para-professionals (existing / newly recruited) for assistance to designated district veterinarian/dairy technologist in surveillance activities (e.g. Training on meat inspection and methods of livestock product adulteration etc.)
- 5. Notification/strengthening of Veterinary hospitals for Adverse Drug Reaction (ADR) monitoring.
- 6. Producer level awareness campaign at risky areas and distribution of subsidized food safety kits/laboratory set up grant to producer organization for food safety monitoring at their level.
- 7. Design and implementation of a surveillance program in identified risk areas and sharing of data with food safety Commissionerate.
- 8. Enforcement of food safety law through designated food safety officers under Commissionerate of food safety.
- 9. Promotion of livestock food certification system for private vendors and retail outlets.

Project outcome:

- A functioning partnership and mechanism for public health risk mitigation
- Increase the income of vendors/retailers' form of market-driven food certification service.

Project: 4

Project name: Referral support for handling infertility and reproductive disorder.

Aligned Program Name: Utpadan

Functional Area of department/account head: Promotion of livestock ownership, Livestock/poultry breeding support.

Project justification: Livestock census analysis indicating the importance of handling infertility.

Project location: Identified livestock production clusters

Description: The program aims at ensuring access to quality referral service related to the handling of infertility and reproductive disorder in livestock.

Goal: To improve pregnancy and calving rate.

Project implementation: Through an expert team to be outsourced from the veterinary college / private consultant/company.

Program partner: Cluster level producer organizations, Indian Society for Study of Animal Reproduction (Assam Chapter).

Project component:

- 1. Consultancy for Cluster analysis for suitable campsites, mapping of routes and operation planning, data handling and coordination.
- 2. Commissioning of the vehicle for movement of experts.
- 3. Medication and nutritional supplements.
- 4. Portable ultra sound for sonographic diagnosis.
- 5. Publication and distribution of extension materials
- 6. Skill training of local accompanying veterinarian and paraprofessionals.

Project outcome:

• Improved productivity in covered areas.

Project: 5

Project name: Facilitating livestock business advisory service

Aligned Program Name: Utpadan

Functional Area of department/account head: Enterprise value chain development, risk support and Facilitation of livestock product marketing and trade.

Project justification: (1) Low general awareness about business opportunities within the sector (2) Need to proactively promote investment in value chain critical enterprise (3) Importance of demand-side intervention to encourage production and aggregation. (4) Inadequate capacity of a local private service provider for such service.

Project location: Office of Assam Livestock and Poultry Corporation Ltd.

Description: The project aims at promoting private investment with a focus on areas that are critical for the performance of livestock value chains. It will also undertake demand-side interventions to create demand for local produce/branded livestock products.

Goal: To boost private investments (both from outside and within the state) and build the base for future private livestock business advisory services in Assam.

Project implementation: Through an expert team of consultants to be sourced both from within the department and from a partnered organization.

Program partner: Any company known for its advisory services and services related to turnkey livestock related project implementation and state lead bank.

Project component:

1. Identification of prospective investors and pro-active organization of one to one interaction programs with them.

- 2. Conduction of preliminary feasibility of study for potential business ideas in the livestock sector with suitable locations within Assam.
- 3. Development of Livestock Enterprise Decision Support System (LEDSS) for reference of banks.
- 4. Website and dedicated call centre service for people wanted to learn about ways to set up farms / other related enterprises in the livestock sector.
- 5. Assistance in preparation of detail project reports (DPRs)
- 6. Turnkey consultancy service to clients (including assistance in farm animal/bird selection and procurement -within and from outside the state).
- 7. Marketing of services provided under the project to reach out and create demand for the same.
- 8. In-house continuous training of consultants and internal capacity building for project operation on a sustainable model.

Project outcome:

- A self-sustaining livestock advisory service providing organization.
- Growth of enterprises in value chain critical areas.

Project-6

Project name: Campaign for better animal nutrition (Puhu Puhon Yatra)

Aligned Program Name: Utpadan

Functional Area of department/account head: Service standards control, Extension, Skilling and entrepreneurial support

Project justification: (1) Need to reduce cost of production which is possible through feeding-related intervention (2) Possibility of improvement of milk standards (Fat / SNF) through better nutrition leading to better price realization by farmers (3) Low general awareness about importance of feeding /cultivation of greens, fodder preservation/nutrient enhancement methods, fodder linked innovations (e.g. Silage/hydroponics etc.) (4) Need for protection and rejuvenation of grazing reserves (5) Need to increase and regular availability of quality fodder seeds (6) Need to bring integration with agriculture and agroforestry for feed and fodder availability (7) Need for scientific feeding to ensure reduce Green House Gas emission.

Project Location: Across the state.

Description: The project aims at awareness generation related to appropriate feeding of livestock for improved farm economics. It focuses on the feeding of greens and aims at developing a demand-driven environment where the supply of greens and quality commercial feeds improves.

Goal: Improved cost of production and better price realization by farmers (Through improve product standards)

Project implementation: Through field level collaboration with private companies, cooperatives, industry and professional animal nutrition-related associations.

Program partner: Dairy development department, Agriculture Department, Forest department, ICAR centres within the states and any lead NGO capable of overseeing operational management.

Policy environment:

- (1) Agriculture policy to promote feed crop cultivation and use of agriculture by-product in animal feeding.
- (2) Implementation of Cattle Trespass Act to protect cultivated fodder crops from stray cattle.

Project component:

- 1. Constitution of an expert committee to prepare the package of practices in livestock nutrition in Assam's context.
- 2. Production of knowledge products, e.g. short video on the importance of feeding greens, video on fodder-based technologies, video on balance feeding, feed formulation mobile applications in the local language, leaflets on fodder cultivation practice etc.
- GIS mapping of grazing reserves for targeted and monitored interventions and collaboration with local self-government and land management committees for protection and rejuvenation of grasslands.
- 4. Promotional grant support to local grazers associations and traditional village / community-based grazing systems for organizational strengthening.
- 5. Purchase and designing of 'Pashu Pohan Yatra' vehicle for each of the six agro-climatic zones fitted with extension related equipment, e.g. projectors, portable sound system, display panels etc.
- 6. Organization of visit of "Pashu Pohan Yatra' vehicle with a mobilized team of implementing partners to strategic locations for camps.
- 7. Marketing of the initiative for continuous generation of working capital through advertisement form companies, including CSR funding from corporate houses.
- 8. Partnership for production of fodder seeds, silage etc. in government farms for marketing through "Pashu Pohan Yatra" camps. (*Initiative need to avoid free distribution of seeds*)
- 9. Organization of regional meetings and investment seminars for livestock feed dealers (to encourage them for seed marketing) and technology investors.
- 10. The incentive to local companies/producer groups for the marketing of seeds, fodder and fodder-based products.

Project outcome:

- Adoption of recommended good feeding practices.
- Increase availability of greens and grains / agricultural by-products for use in animal feed.
- Increase availability of fodder seeds/quality compound feed.

Project-7

Project name: Promotion of Artificial insemination for selective breeding of local Assam Hill Goat

Aligned Program Name: Upolobdho

Functional Area of department/account head: Promotion of livestock ownership, livestock/poultry breeding support.

Project justification: (1) The draft goat breeding policy-2014 of Assam is suggesting selective breeding of Assam Hill Goat (2) The farmer's flock is generally small hence they cannot afford to bear the cost of maintaining the breeding buck. (3) There is a shortage of male of superior genetic makeup in the state for natural service; artificial insemination can help multiply the number of services in manifold from a valuable buck.

Project location: The project should be initiated in a district having existing departmental goat related infrastructure. Based on the learning, it should be expanded to cover more areas.

Description: The project aims at promoting selective breeding of Assam Hill Goat through setting up of infrastructure and delivery mechanism for artificial insemination in Goat.

Goal: To achieve increase population of pure-bred Assam Hill Goat of standard characteristics.

Project implementation: Through field level collaboration with Assam Agricultural University and commissioned a private firm for impact evaluation.

Program partner: Assam Agricultural University, Apex committee of Goat Breeders' Associations *Policy environment:*

- 1. The project will be guided by Goat Breeding Policy of Government of Assam.
- 2. The departmental policy should ensure convergence of various schemes to support beneficiaries within the project area with bank credit, financial incentive, basic service delivery and marketing arrangements.

Project component:

The project will have five inter-linked components (A to E) with corresponding activities across each of the components, as mentioned below.

A. Situational Analysis

Commissioning of study with the following activities:

- 1. GIS supported goat husbandry related situational, baseline and resource mapping/sustainability analysis in the select project area(s)
- B. Infrastructure development

Setting up of semen production centre through the following activities:

1. Strengthening and commissioning of existing government goat farm as scientific buck rearing facility.

- 2. Setting up of facility for semen collection, processing and storage as per standard guideline for semen production stations.
- 3. Commissioning of appropriate software for e-semen banking (e.g. Management of Buck health and semen production records, management of semen inventory, straws distribution, AI data and daughter production and health records for progeny testing.)

C. Operation Management

With the provision of resources for the following activities:

- 1. Formation of goat breeder association (GBAs) for list of task such as: (a) Support to centre for quality buck selection and procurement, (b) Prevention of indiscriminate breeding within assigned areas, (c) Promotion of animal identification and regular collection of individual animal performance measure (using mobile application), (d) Marketing of straws and provision for skilled man power for AI and (e) Breeding related extension service at farmers doorstep, (f) Facilitation of departmental health service delivery at GBA level, (g) Promotion of fodder tree plantations etc.
- 2. GIS-based mapping of areas covered by GBAs for effective operations management and regulation of breeding operations.
- 3. Periodic quality buck selection and procurement in association with GBAs
- 4. Implementation of standard husbandry practices for the rearing of select quality bucks within the centre.
- 5. Online GBA level breeding, production and health data management (Supporting GBAs for data management)
- 6. Process documentation and subscription of quality certification for the centre(s) and overall operations.
- D. Capacity building

With the provision of resources for the following activities:

- 1. Continuous hands-on training of GBA representative on Artificial insemination techniques.
- 2. Agri Skill Council of India certification of need-based select numbers of GBA representative as Artificial insemination technicians.
- E. Intensive research-based Monitoring and Evaluation

With the provision of resources for the following activities:

Concurrent activities:

1. Regular analysis of reports generated through the developed data management system.

Midterm activities:

- 1. A sample study of the functioning of GBAs vis a vis service delivery by the department.
- 2. Sample environmental impact study and engagement with members of local self-government for mitigation of impact (if any).
- 3. Sample study for goat value chain performance.

End project activities:

- 1. Participatory review of GBA's performances.
- 2. Review of the opinion of the leadership of local self-government regarding sustainability / environmental impact.
- 3. Review of system reports related to the population of identified goat and production performance (across various known parameters), growth of AI numbers and number of AI technicians, Conception rate, the trend of kids born etc.
- 4. Review of centre performance across Key Result Areas (e.g. Semen production numbers, growth of centre promoted GBAs, Health assessment of breeding bucks within the centre, Data quality, maintenance of facilities as per quality certification requirement etc.)

Project outcome:

Short term

- 1. Indiscriminate goat breeding stops in mapped GBA areas.
- 2. Farmers adopt A I service with the centre's straws.
- 3. The matured data system is in place for real-time analysis and performance evaluation.
- 4. GBA's starts generating revenues.

Long term:

- 5. Assam Hill Goat breed population attains sustainable numbers within mapped project areas.
- 6. Average production of Assam Hill Goat kids in project areas improves then baseline.
- 7. Farmer income improves due to the reduced cost of breeding.
- 8. GBAs matures as breeding enterprises.

Project-8

Project name: Trade-Related Infrastructure and Capacity Building (TRICB) of Animal / Animal Product Sector in N E Region of India (With Assam as lead State)

Aligned Program Name: Utpadan

Functional Area of department/account head:

A joint endeavour of the following functional areas:

- 1. Enterprise, value chain development, risk support and facilitation of livestock/poultry product marketing and trade.
- 2. Epidemiology, disease control and public health

Project justification: (1) N E region shares 98% of its international borders with foreign neighbour and informal trade of livestock and livestock product is ongoing in many border areas (2) International trade and consequent in-country movement of livestock and livestock product is increasing the threat of transmission of animal diseases (3) Act East Policy of Government of India, Free Trade Agreement with ASEAN, Pan Asian Highway, Trans Asian Railway etc. will increase formal trade of livestock products (4) Local enterprises are relatively non-competitive, there is a need to prepare for international trade challenges be it potential import surges (detrimental to local enterprises) or attaining export competitiveness. (5) India's international commitment to promote safe animal/animal product trade and control of transboundary animal diseases.

Justification of Assam as the lead state for the project:

(1) Guwahati is the trade hub of the entire North Eastern Region (2) North Eastern Regional Disease Diagnostic Laboratory for animal disease is located at Guwahati, Assam

Project location: Interstate (within NER) and International border areas.

Description: The project aims at in-country and international trade-related infrastructure and capacity building in the light of future border trade challenges (e.g. Surge in the import of livestock/livestock products, entry of animal diseases etc.) and sustainable future growth of safe and profitable animal product export trade. The project will help in creating a common trademark of livestock products originating in North Eastern Region India. It will also support India's commitment to OIE for promoting safe animal product trade and control of transboundary animal diseases.

Goal:

- 1. Safe and fair animal product trade that protects the interest of domestic enterprises.
- 2. Facilitation for a regional trademark of animal products originating from enterprises within NER.
- 3. Protection of Animal resources from diseases transmitted from foreign countries.

Project implementation: Through special project team constituted through deputed Veterinary and Animal Husbandry officials from 8 N E states.

Program partner: Border Area Development / Security related Authorities in all the N E states, Ministry of Trade and Commerce, Government of India, Agricultural and Processed Food Products Export Development Authority (APEDA), Assam Agricultural University-Jorhat and Central Agricultural University -Imphal, ICAR Research Complex for NEH, Barapani.

The project to build on output of ongoing DBT funded NER Project on Advanced Animal Disease Diagnosis and Service Management Centres.

Project component:

Phase -1

- (1) GIS-based risk mapping of production clusters, physical livestock markets (nearest to the border interstate/international) and animal movement routes (Inter-state and with an international neighbour).
- (2) Socio-economic, value chain practices and lab data-based animal disease risk assessment of borders areas (with Formal and informal animal/animal product trade)
- (3) Stakeholder assessment in the context of interstate / international animal/animal product trade.
- (4) Review of border control related infrastructures and specific trade process related regulations (India and neighbouring countries) in the context of animal/animal product trade.
- (5) Trade volume assessment (formal/informal) and rapid livestock sector review of the bordering countries in the context of trade/export competitiveness.

Phase-2 (Based on risk-based prioritization of areas)

- (6) Establishment and formalization of project level linkages with stakeholders' responsible for border area development, rapid disaster response, trade facilitation and security.
- (7) Formation and orientation of 'sentinel' farmer's and trader's organizations in border areas as project facilitators.
- (8) Capacity building of border area para-vets on disease surveillance and biological threats and linking them to sentinel organizations.
- (9) Border control related Infrastructure designing and commissioning through appropriate agencies.
- (10) Farm premises registration in border areas for real-time mapping of farm growth and reporting of disease data.
- (11) Establishment of institutional, incentive, process, regulatory and partnership framework for need-based response and sustainable growth of safe animal and animal product trade.
- (12) Constitution of livestock and livestock product trade-related North East level advisory group for brand building and future trade monitoring and negotiations.

Project Output:

For Phase 1:

A strategic framework for animal and animal product trade-related capacity building (TRCB) containing:

- Risk maps/map of the trade route with sensitive areas/production clusters.
- Required institution/infrastructure list vis a vis projected trade growth with locations.
- Information on required trade regulation related process improvement.
- Threat assessment of possible product wise import surges.
- Data gaps and measures to address the same.
- Stakeholders and scope of partnerships.

• Investment needs with prioritization.

For Phase_2:

- Ground level farmer's / trader's institutions facilitating activities like awareness generation on value chain related disease risk, farm premise registration, disease and trade-related reporting etc.
- Trained para-vets.
- Developed infrastructures.
- Registered farm premises.
- A functioning system of animal/animal product trade data generation, disease / bio-safety monitoring and response.

Project outcome:

- Functioning interstate / international border trade infrastructures and processes, ensuring safe, fair trade of livestock products.
- Control over the transmission of transboundary animal diseases.
- Brand recognition and increased trade competitiveness of domestic enterprises.

The Basic Sectoral Action Plans

Cattle Sector

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
Large animal Veterinary Service. (Refer service delivery models)	Large animal Veterinary Service Program. (General Program) *State-level risk profiling and targeted preventive vaccination of prevalent cattle diseases on mission mode, ensuring herd immunity. * Partnership establishment as per given service models for different context to improve availability, access and adequacy of services. * Availability of Point of care and laboratory diagnostic facility for the use of field veterinarian working towards ensuring productivity	To prevent the occurrence of all major cattle disease outbreak To ensure herd health and productivity. (Considering village/locality cattle population as herd) To protect the livelihood of farmers by saving the life of diseased, injured animals.	Continuous with a review every five years.	(1) Reduce the incidence of major animal diseases (2) Increase per cent adoption of preventive /safe practices amongst sampled farmers. (3) Reduced response time of mobile veterinary care.

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
Cattle Breeding support (Refer 8-point strategy for streamlining of breeding operations)	linked health monitoring of cattle herds. * Assistance for maintenance of mobile service facility. * Assistance of service-related consumables. *Assistance for maintenance of District Vety. Referral Facticity. * Encouragement of private veterinary pharmacy service in each SVD. * Promotions of scientific ethnoveterinary practices. Artificial insemination service. (General Program)	To achieve 100% demand driven area coverage and supply of semen straw. To produce demand driven certified inseminators. 100% identification of breedable cattle population receiving AI for focused IT-based data generation. To put in place a credible mechanism for calculation of standard performance criteria, e.g.	Continuous with a review every three years.	(4) Increase demand for a semen straw. (5) Reduced wastage (6) Increase in certified inseminators (7) Improved conception rate of supplied semen.

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
		conception rate etc.		
Support for calf rearing	Assistance to breeders for calf rearing (Flagship Project No. 2)	To support 50 private breeders and 100 DCSs for production of the healthy and quality crossbred heifer. (Target number of heifer production per year to be fixed based on local situation assessment)	Five years (To be continued for another five years based on an independent evaluation)	(8) Reduced calf mortality (9) Improved availability of dairy animals to farm with as measured by trade record of a heifer from supported units. (10) Increase adoption of Artificial Insemination technology within the supported localities.
Handling of infertility and reproductive disorders.	Referral support for handling of infertility. (Flagship Project No.4)	To organize a minimum of three camps in different strategic cluster areas per district per year.	Five years (To be continued for another five years based on an independent evaluation)	(11) Improved pregnancy and calving rate in supported cluster areas. (12) Emergence of private enterprises providing modern breeding related services.
Support for traditional farming practices.	Strengthening of <i>Khuti /</i> traditional operation with a local animal (Cattle / Buffalo) (General project) *Notification of <i>khuti /</i> traditional free-range local cattle & buffalo rearing areas for protection against theft, targeted action to prevent inbreeding and deputation of mobile	To revive the traditional farming system and thus boost production of near organic A2 milk. To conserve local animals. Improve livelihood	Five years (Yearly target to be fixed based on the estimation of the number of such areas district wise.)	(13) Functioning associations supported under the project. (14) Increased availability of near organic branded A2 milk/milk products.

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
	veterinary units for services. *Grant support for the formation of the/ district (relevant districts only) / state level khuti traditional farm owner's association (or revival of exiting grazers association where available) * Support to associations for milk transport related expenses to augment centralized procurement in strategic locations. * Supply of viable green fodder seeds for cultivation in riverine areas. *Documentation and promotion of scientific and climate resilient practices. * Infrastructure support for milk holding and retailing of whole milk and traditional product through branded parlours. (Convergence through Directorate of Dairy Development)	people dependent on khuti system.		(15) The emergence of private firms producing and marketing / near organic / A2 milk.

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
By-product utilization	Setting up of Bio-gas / Cow dung / Cow urine/ utilization plants / facility within DCS areas. (Additional Mobilization fund through Gobar Dhan Scheme of Government of India) *To include support for component related to aggregation and setting up of marketing network.	To augment economic / environment friendly bioresource utilization. To improve farmers income.	Three years (Yearly targets to be fixed based on viable DCSs) To be continued based on the evaluation.	The developed market for by-products as measured by earning at the level of DCSs. (17) The emergence of private by-product utilization and trading activities.
Awareness creation for green feeding	Pahu Puhon Yatra (See flagship project 6 for detail of components)	To augment the adoption of good feeding practices. To ensure availability of greens and grains/agricultur e by-product for use in animal feed. To ensure availability of fodder seeds/quality compound feed.	Three years To be continued based on the evaluation.	(18) Post-program awareness of good practices.
Fodder production	Setting up of community fodder/silage bank.	To organize farmers for fodder production.	Three years With a target to set up five banks in each district (both in rural and peri-urban areas – based on feasibility for demonstration effect.	(19) The number of performing community fodder banks.

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
Support through existing departmental infrastructure	Rejuvenation of government cattle buffalo / fodder farms	To re-shape government farms: (a) As a provider of quality heifer / Selectively bred swamp buffalo bull to Khutis. (b) As incubation facility for enterprise promotion. (c) As a producer of fodder seeds. (d) As a producer of fodder/feed block for distribution to farmers and as disaster response.	Continuous with a review every five years.	(20) The number of heifer / Buffalo bull sold/distributed to farmers. (21) The volume of fodder seed marketed. (22) Promoted/incubated enterprises. (23) Animal feed related disaster response quality, efficiency and time.
Training and Capacity building	Support to department / private institution for the training of dairy master farmers and farm supervisors. (General Program)	To ensure availability of master dairy farmers in each panchayat for technology dissemination, setting up of farm schools etc. To ensure availability of trained supervisory man-power for the dairy sector.	Three years (Fixation of yearly target based on the total number of village panchayat and district level demand estimation of skill dairy farm supervisors.	(24) Per cent panchayat having active master dairy farmers. (25) The number of skill council registered dairy farm supervisors.

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
Action plan for imple	mentation through ALPCo			
Dairy Business Advisory	Facilitating dairy-related business advisory service. (Refer to Flagship project 5 for components)	To boost private investment in the dairy sector (both from outside and within the state) and to build a base for future private business advisory services in Assam	Three years (Project to graduate as an independent private enterprise)	(26) Established state-level private advisory company.
Entrepreneurship development.	Venture capital fund for farm input, processed product/by-product manufacturing/trading activities linked to the dairy sector. e.g. Trading of live cattle/buffalo, Facilitation of participation of local enterprise in trade expos. Innovation fund support. (Open for any innovative idea ensuring the promotion of locally produced products - where possible)	To facilitate value chain activities. To ensure the availability of critical farm input. To create a market for the processed/packa ged product, e.g. Cheese from Khuti buffalo milk. To create a market for by-products, e.g.	Continuous with a review every three years.	(27) The number of enterprises supported.
Action plan for imple	mentation through Directorat	cow dung, cow urine. e of Dairy Developn	nent	
Milk Aggregation and Procurement and marketing.	Support to DCS formation and strengthening of their capacity for milk procurement, service delivery, processing and marketing of milk and milk products.	To ensure efficient functioning of promoted DSCs.	Continuous with a review every three years.	(28) Per cent functioning DCS promoted/supported through the departmental initiative.

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
	* Mobilization, training and grant support for improved governance of DCSs. * Periodic incentive to DCS members for clean and standard milk production. * Initiative for optimal use existing Bulk Milk Coolers and Demanddriven distribution of subsidized Bulk Milk Cooler / Chilling unit to DCS. *Demand-driven distribution of subsidized Automatic Milk Collection and Testing Units to DCS. * Demand-driven man hour assistance to DCS through free consulting services of qualified officers for quality control, oversight of processing and value addition.			
Brand building and Marketing support	Support for milk and milk product-related brand building to federated DCS (at any level with viable production) * Priority access to departmental milk processing plants/labs) *One-time grant support for modern pasteurization, packaging labelling unit. * Reimbursement of	To create demand for local milk and milk products.	Three years. To support 5 enterprises (Private / Cooperative / Producer company)	(29) Performing brands/visibility. (Based on the increase in sales volume)

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
	brand consultant and Media commercial production expense. * Government procurement priority for supported brands.			
Services to DCS members	Facilitation of service delivery to DCS members. (General program) *Grant Support for mobilization / governance of Annual Maintenance Contract between DCS and AHVD mobile veterinary facility or facility from private agri-clinic / service provider. * Grant Support for mobilization / governance of Annual Supply Contract between DCS and feed miller/compound cattle feed/silage marketing company. *Grant Support for mobilization / governance of Annual Maintenance Contract between DCS and Animal Identification / governance of Annual Maintenance Contract between DCS and Animal Identification / Data Management Service Provider. * Grant support for mobilization / governance of Annual Service Contract between DCS and Livestock insurance Service Provider.	To strengthen DCSs as a provider of services and linking milk procurement with services.	Continuous with a review every three years	(30) Increase the number of service contract vis a vis performance.

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
Support through existing departmental infrastructure (DDD)	Rejuvenation of government processing plants and Milk / Milk product quality control labs.	To re-shape government processing plants: (upgradation of physical structures and required soft infrastructures) (a) As a facility for production of value-added milk product by a select group of private peri-urban dairy or DCSs. (Federated at various levels) (b) As a demonstration unit for entrepreneur ial training on value-added milk product making. (c) As a fixed period incubation centre for 1st generation enterprise willing to venture into milk product manufacturing.	Five years (Annual target to be fixed based on a ground assessment)	(31) Functioning plants and number of supported DCS / Private enterprise.

Activity Name	Relevant / General Program / Flagship and normal Project.	Goal-2030	Timeline	Indicator
Cottage Milk Processing	Support to cottage milk processing (General program) *Notification of know belts for cottage processed milk products. * Support to skilled persons to document manufacturing process and standardize same where possible with IPR protection to the community. * Exploration for feasibility to apply for Geographical Indication -if any. *Grant support to NGOs working with processors for scaling up, quality control and marketing support.	To augment the consumption of traditional dairy products as nutrition linked demand-side intervention for enhanced milk production, consumer health and farmers income.	Three years	(32) Increase the market presence of cottage milk products.

NB:

NB: The above action plan takes care of SDG Action plan. The sector will also be benefited through various other cross-cutting programs (e.g. Flagship project on Trade-Related Capacity Building).

Additional intervention in the dairy sector for implementation through partnership:

- 1. Organization periodic meeting of all private sector companies in Assam associated with fodder and feed sector to achieve the followings:
- a) Updated district wise database of the supplier contact point (Feed/seed/ other fodder products/technology)
- b) Solicit participation of private companies (Manpower / financial) for "*Pashu Pohan Jatra*" for promotion of good feeding practices and available technologies. Private companies can also be approached with the proposal for joint branding of the vehicle to be used for such a campaign.
- c) Inform companies about the geographical areas receiving free fodder seeds and the need for the private sector to ensure seed availability in such areas beyond the continuation of such schemes of free distribution.
- d) Identify and motivate potential investors for investment (including capacity expansion) in feed milling, silage production and other related areas.

- 2. Pro-active work with investors willing to set up a private plant for silage or inter-state trade import/marketing of finished silage in Assam.
- 3. Work with cultivators / private traders of Maize to ensure appropriate harvesting and post-harvest management (To reducing the moisture content of local maize).
- 4. Promotion of private sector driven identification of cattle in a promoted cluster with IT-based real-time data generation for Herd health, productivity, trading of live animals and traceability of milk.
- 5. Promotion of private investment for setting up of elite cattle breeding farm along with support for getting semen from genomic bulls for use in such elite dairy breeding farms.
- 6. Promotion of any private initiative to provide dairy cattle farming focused mobile technology-based advisory services in the local language.
- 7. Promotion of private insurance service for dairy cattle.
- 8. Support to modernization (including biosecurity planning) of select physical markets known for livestock trading.
- 9. Constitution of a state level "cost and price committee" to collect cost data on a real-time basis (through a mobile application) from various region and farming systems and to develop a programming-based application to calculate the cost of production of milk.
- 10. Mobilization of private investment for setting up of export-oriented modern plant to produce organic cheese from swamp buffalo milk produced under *Khuti* system.

Other policy tools/initiatives relevant to the dairy sector:

(Preferably through the declaration of separate private investment policy)

- 1. Additional subsidy through banks for setting up of commercial farms and various sector linked private value chain related enterprises, e.g. cattle feed plant, silage production/marketing unit, genomic and assisted reproductive services, private agri-clinic and A I services etc.
- 2. Additional capital investment subsidy support to federated DCS managed milk processing plant set up / modernization of existing plants, including setting up of independent milk and milk product quality control labs.
- 3. Reduction of GST on department registered private Artificial Insemination Service (Services Accounting Code 998612), Dairy product manufacturing services (Services Accounting Code: 998815), Prepared animal feeds manufacturing services (Services Accounting Code: 998817) from current 18% slab for local enterprises.
- 4. Constitution of Cost and Price committee at the state level with the necessary support for data generation, analysis and declaration of prevailing cost of production and region and farming system wise suggestive milk price.
- 5. Promotion of private data management companies to support herd health management, dairy farm productivity improvement, milk traceability and genetic improvement of cattle.

- 6. Enforcement of cattle breeding policy, data sharing with the government by private A I operators.
- 7. Enforcement of practice of data sharing about vaccination by the private sector through appropriate law under Prevention & Control of Infectious & Contagious diseases in Animal Rules, 2010.
- 8. Government facilitation of live cattle transport to and from state to other parts of the country.
- 9. Legislation to control stray cattle menace hindering open fodder cultivation.
- 10. Amendment in Assam Cattle Preservation Act, 1950 to give more power to state police for preventing smuggling of cattle from state to neighbouring countries.
- 11. Understanding with food safety Commissionerate and implementation of the law to regulate adulteration and unethical market practices (e.g. illegal trading of milk powder).
- 12. Declaration of wheat bran supply quota for peri-urban dairy through food and civil supplies department.
- 13. Notification of peri-urban dairy estate with infrastructure support for common amenities to be utilized by local private entrepreneurs.
- 14. Understanding with the forest department for joint fund mobilization for rejuvenation of notified pasture and fodder production through agro-forestry.

Role of the Department of Dairy Development and responsibility of independent Dairy Cooperative Sector

The state of Assam needs federated DCSs at any level, e.g. district, region/state with a scale of aggregation suitable for economic milk processing and value addition. The federated DCSs must endeavour to provide all inputs / related services to its member farmers (with cost recovery through procured milk).

The state government, through its Dairy Development Department, should register and promote such federated DCSs. The decision to have a state level federation, however, should depend on district / regional federations based on a participatory assessment of benefits. The governance of federated DCS (e.g. vibrant membership of functional DCS, Independent board, etc.) is very important as ultimately the aim is to ensure benefit delivery to producer farmers.

The following is the suggested role of the Department of Dairy Development and responsibilities of existing / future independent DCSs / federated cooperative unions.

Role of Dairy Development Department:

- (1) Overseeing of governance of federated DCS at all level.
- (2) Augmentation of formation of new DCSs in areas yet to come under formal structure and support for the formalization of the Federation of such DCSs at any level.
- (3) Maintenance of existing Town Milk Supply Scheme (TMSS) for (a) for the use of periurban private dairies / individual entrepreneurs for the production of milk products. (Not liquid milk) (b) Support to an aggregator of traditional cottage processor for standardization of products and marketing (c) use of cooperative society trying to graduate and start its plant.

- (4) Milk safety/market practice regulation in association with the health department.
- (5) Support for Federated DCS for brand building.
- (6) Promotion of private investment in dairy processing and value-added product manufacturing (including cottage milk product sector)
- (7) Support for the formalization of the informal sector.
- (8) Overseeing the work of cost and price committee.
- (9) Policy initiative to promote private investment in specific dairy value chain activities.
- (10) Facilitation of coordination between DCS and Department of Animal Husbandry and Veterinary / Any externally supported project.

Responsibility of the Cooperative sector:

- (1) All dairy cooperatives (registered with cooperation department / Dairy Development Department) should periodically provide a governance and performance report to Dairy Development Department as per standard format.
- (2) Any DCSs providing independent Artificial insemination services must share breeding related data (in given standard format) with Assam Livestock Development Agency, as the responsibility of implementation of the breeding policy lies with the agency.
- (3) Cooperative must get unique animal IDs only through state government approved authority.
- (4) Cooperative should either sign MoU with Department of Animal Husbandry and Veterinary to get need-based herd health/productivity focused veterinary services for its members or inform the department regarding its internal arrangements for services including an agreement with any private party (if any).
- (5) Cooperatives providing veterinary services independently from the Department of Animal Husbandry and Veterinary must ensure regular sharing of disease incidence / and vaccination data with the department as per standard format. In such case, the Department of Animal Husbandry and Veterinary will legally notify² area under the cooperative for vaccination by cooperative authority following the standard procedure specified.

-

² Under Prevention & Control of Infectious & Contagious diseases in Animal Rules, 2010.

Piggery Sector

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal	Timeline	Indicator
Small Farm animal Veterinary Service. (Refer service delivery models)	Small Farm animal Veterinary Service Program – Piggery sector. (General Program) *State-level risk profiling, and targeted / timely available preventive care/vaccination of prioritized Pig diseases (infectious/zoonotic) on mission mode ensuring herd immunity. * Awareness development and Incentive for cluster level initiative by FPOs / Cooperatives for bio-security and good practices guide implementation, e.g. regular deworming handling of piglet anaemia etc. * Partnership establishment as per given service models for different context to improve availability, access and adequacy of services. * Availability of Point of care and laboratory diagnostic facility for the use of field veterinarian working towards ensuring productivity linked health monitoring of pig herds. * Assistance for maintenance of mobile service facility for interior tribal areas. * Assistance of service-related consumables and maintenance of referral consultation facility for field veterinarian on call. * Encouragement of private veterinary pharmacy service in each SVD (Ensuring assortment of drugs for use in	To prevent the occurrence of all major pig disease outbreak and create disease-free zones. To ensure herd health and productivity. (Considering village/locality pig population as herd) To protect the livelihood of farmers by saving the life of diseased, injured animals.	Continuous with a review every five years.	(1) Incidence of major pig diseases (2) Per cent adoption of preventive /safe practices amongst sampled pig farmers. (3) Response time of mobile veterinary care. (4) Piglet mortality (sampled farmers)

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal	Timeline	Indicator
	pig sector) * Promotions of scientific ethnoveterinary practices.			
Pig Breeding support	Artificial insemination service for Pigs. (General Program) *Creation / up gradation of needed infrastructure	To achieve 100% feasible demand driven area coverage and supply of semen straw to notified cluster areas.	Continuous with a review every three years.	
	* Maintenance of Project Management Unit under ALDA. * Production/procurement of semen. *Maintenance of cluster and central distribution infrastructure. *Strategic partnerships and coordination with stakeholders. * Support for consumables.	To certify inseminators for cluster areas as per National Occupational Standard. 100% premises identification of households/farms adopting AI in pig for focused IT-based data generation. To put in place a credible mechanism for calculation of standard performance criteria to measure the success of AI.		(5) Increase demand for the service.

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal	Timeline	Indicator
Awareness creation for scientific feeding.	Pahu Puhon Yatra (See flagship project 6 for detail of components)	To augment the adoption of good feeding/feed cultivation practices. To ensure availability of good commercial pig feed and other safe feed options through FPO level engagement with the private sector. To discourage swill feeding.	To be continued based on the evaluation.	Percent adoption of Scientific and /safe practices as measured amongst sampled farmers within the campaign area vis a vis non-campaign area
Support through existing departmental infrastructure	Rejuvenation of government Pig farms as Nucleus Pig/multiplier farm and as a centre for incubated commercial farms. (General Program)	To re-shape select government farms (a) As nucleus pig farms. (both for purebred and indigenous variety) (b) As multiplier farms. (c) As farms to support incubated private commercial farms.	Continuous with a review every five years.	Functional Nucleus Farms (8) Number of breedable gilts produced by multiplier farm (9) Availability of quality pigs for breeding/fattening as measured by trade record of sampled private breeding farms. (10) Promoted/incubated pigrelated enterprises by government farms

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal	Timeline	Indicator
Asset distribution	Assistance to women for livestock-based livelihood and nutrition (<i>Surovi</i>) (See Flagship Project_ 1 for details)	(1) Enhance family income and improved nutrition. (2) Demand-side support for the growth of local breeding farms.	Three years	(11) Number of beneficiaries in the pig sector
Conservation of local breed of pig (covering areas known as a breeding track)	Support to nomadic farmers of local pig herds. (Normal project) *Issue of herd identification card for recognition of farming practice and to protect from any rent-seeking. *Free vaccination support at designated areas as per the convenience of the nomadic community. * Support for de-worming medicine. (including ethnoveterinary product preparation as per community knowledge) *Support for temporary night shelter.	To arrest the declining growth of nomadic activity related to the rearing of the local breed of pigs.	Three years	(12) Increased nomadic activity (Number/average. herd size)

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal	Timeline	Indicator
Training and Capacity building	Support to department / private institution for the training of pig master farmers and farm supervisors. (General Program)	To ensure availability of master pig farmers in each suitable panchayat for technology dissemination, setting up of farm schools etc. To ensure availability of trained supervisory manpower for private pig enterprises / FPOs.	Three years (Fixation of yearly target based on a total number of suitable village panchayat and district level demand estimation of skill pig farm/enterprise supervisors.	(13) Percent of suitable panchayat having active master pig farmers. (14) Number of skill council registered pig farmer/farm supervisors.
Action plan for in Pig Business Advisory	Facilitating Pig related business advisory service. (Refer to Flagship project 5 for components)	To boost private investment in the pig sector (both from outside and within the state) and to build the base for future private business advisory services in Assam	Three years (Project to graduate as an independent private enterprise)	(15) Established state-level private advisory company.
Entrepreneursh ip development	Venture capital fund for farm input, processed product/by-product manufacturing/trading activities linked to the pig sector. Facilitation of participation of local enterprise in trade expos. Innovation fund support.	To facilitate value chain activities. To ensure the availability of critical farm input. To create market / promote brand of locally processed pork products. To create market	Continuous with a review every three years.	(16) Number of pig sector related enterprises supported.

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal	Timeline	Indicator
	(Open for any innovative idea ensuring promotion of locally produced products -where possible)	for by-products.		

NB: The above action plan takes care of SDG Action plan. The sector will also be benefited through various other cross-cutting programs (e.g. Refer Flagship project on Trade-Related Capacity Building). The border bio-security control infrastructure indicated under the poultry action plan will also be used to monitor the inter-state import of live pigs and pork products.

Additional intervention areas in the pig sector for implementation through a partnership

- 1. Premises identification of commercial pig farms (All farms not just one receiving A I services) with IT-based real-time data generation for Herd health, Bio-security maintenance, productivity improvement, Improved trading of live pigs and traceability of pork.
- 2. Initiatives by public/private processing plants related to supply chain development and/or contract farming.
- 3. Initiative to develop state of the art 'Livestock Protein Park' with common facility for pork processing to be used by incubated entrepreneurs/farmer groups/companies.
- 4. Initiative by an industry association to develop a publicly accessible database of certified pig breeding farms and contacts of other piggery sector linked services for easy reference of entrepreneurs.
- 5. Initiative to provide mobile technology-based pig sector-specific advisory services in the local language.
- 6. Initiative to build a brand of pork produced from the indigenous breed and reared under safe/natural environment (including from nomadic groups registered with government).
- 7. Initiative for private pig by-product trading activity by FIGs / FPOs / private trader.
- 8. Establishment of model small scale/community level pig slaughterhouses.
- 9. Initiatives for hygienic retailing of pork and pork products.
- 10. Initiative for modernization (including biosecurity planning) of select physical markets known for major pig trading.

Other policy tools/initiatives relevant to the pig sector

(Preferably through the declaration of separate private investment policy)

- (1) Additional subsidy through banks for setting up of commercial pig farms and various sector linked private value chain related enterprises, e.g. pig feed plant, pork processing plants, modern retailing outlets, exclusive pork food joints etc.
- (2) Credit guarantees to successful pig farming-related cooperatives.

- (3) Adoption of law on contract farming.
- (4) Promotion of private data management companies to support farm premises registration, herd health management, pig farm productivity improvement, pork traceability and genetic improvement of the pig.
- (5) Enforcement of pig breeding policy, data sharing with the government by private A I operators.
- (6) Enforcement of guideline for health and point of origin-destination check of traded pigs entering the state.
- (7) Legislation to ensure pig rearing in confinement (within urban and rural cluster areas only, essentially notifying areas for nomadic communities)
- (8) Understanding with food safety Commissionerate and implementation of the law to regulate unsafe pork slaughter / retailing.

Goat Sector

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal 2030	Timeline	Indicator
Small Farm animal Veterinary Service. (Refer service delivery models)	Small Farm animal Veterinary Service Program – Goat sector (General Program) *State-level risk profiling and targeted preventive care/vaccination of prioritized goat diseases on mission mode, ensuring herd immunity. * Partnership establishment with goat cooperatives, farmers groups to improve availability, access and adequacy of services. * Availability of Point of care and laboratory diagnostic facility for the use of field veterinarian working towards ensuring productivity linked health monitoring of goat herds. * Assistance for maintenance of mobile service facility for interior	To prevent the occurrence of all major goat disease outbreak To ensure herd health and productivity. (Considering village/locality goat population as herd) To protect the livelihood of farmers by saving the life of diseased, injured animals.	Continuous with a review every five years.	(1) Incidence of major goat diseases. (2) Percent adoption of preventive /safe practices amongst sampled goat farmers. (3) Response time of mobile veterinary care. (4) Average Mortality of goat (sampled farmers)

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal 2030	Timeline	Indicator
Goat Breeding support	goat cluster areas. * Promotion of deworming in village goat. * Assistance of service-related consumables (e.g. vaccines, de-wormer etc.) *Assistance for maintenance of District Vety. Referral Facticity (for goat disease) * Encouragement of private veterinary pharmacy service in each SVD (Ensuring assortment of drugs for use in goat sector) .* Promotions of scientific ethnoveterinary practices. Promotion of Artificial insemination for selective breeding of local Assam Hill Goat (Refer to Flagship Project 7 for components) Promotion of other relevant technologies e.g. MOET (Multiple ovulation and embryo transfer technology) and cryopreservation technique	To attain sustainable numbers of Assam Hill Goat breed population within mapped project areas. (Against baseline) Ensure improved farmer income through reduced cost of breeding.	Continuous with a review every three years.	(5) Percent adoption of AI in the mapped project area. (6) Active goat breeders' association (numbers with area coverage vis a vis mapped area (7) Number of kids born vis a vis A I done.

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal 2030	Timeline	Indicator
Awareness creation for scientific feeding.	Pahu Puhon Yatra (See flagship project 6 for detail of components)	To augment the adoption of good feeding practices. To ensure specific fodder cultivation for goat.	Three years To be continued based on the evaluation.	Percent adoption of Scientific and /safe practices as measured amongst sampled farmers within the campaign area vis a vis non-campaign area
Support through existing departmental infrastructur e (AHVD)	Rejuvenation of government goat farms. (General Program)	To re-shape select government farms as: (a) As nucleus breeding farm of Assam Hill Goat. (b) As farms to support incubated private commercial goat related enterprise	Continuous with a review every five years.	(9) Number of goat breeder association linked/benefited by the farm (s). (10) Promoted/incubated goat related enterprises by government farms.
Asset distribution	Assistance to women for livestock-based livelihood and nutrition (Surovi) (See Flagship Project_ 1 for details)	(1) Livelihood support, enhance family income and improved nutrition. (2) Demand-side support for the growth of local goat breeding farms.	Three years	(11) Number of beneficiaries in goat sector
Training and Capacity building	Support to department / private institution for the training of goat master farmers and goat farm supervisors. (General Program)	To ensure availability of master goat farmers in each suitable panchayat for technology dissemination, promotion of better housing and setting	Three years (Fixation of yearly target based on the total number of suitable village	Percent of suitable panchayat having active master goat farmers. (13)

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal 2030	Timeline	Indicator
Action plan for	· implementation through ALP	up of farm schools etc. To ensure availability of trained supervisory man-power for private goat enterprises.	panchayat and district level demand estimation of skill goat farm/enterprise supervisors.	Number of skill council registered goat farmer/farm supervisors.
Goat Business Advisory	Facilitating Goat related business advisory service. (Refer to Flagship project 5 for components)	To boost private investment in the goat sector (both from outside and within the state) and to build the base for future private business advisory services in Assam	Three years (Project to graduate as an independent private enterprise)	Established state-level private advisory company.
Entrepreneur ship development	Venture capital fund for farm input, processed product/by-product manufacturing/trading activities linked to the goat sector. Facilitation of participation of local enterprise in trade expos. Innovation fund support. (Open for any innovative idea ensuring the promotion of locally produced products -where possible)	To facilitate value chain activities. To ensure the availability of critical farm input. To create a market / promote the brand of locally processed goat meat products. To create a market for by-products.	Continuous with a review every three years.	Number of goat sector related enterprises supported.

NB: The above action plan takes care of SDG Action plan. The sector will also be benefited through various other cross-cutting programs (e.g. Flagship project on Trade-Related Capacity Building). The border bio-security control infrastructure indicated under the poultry action plan will also be used to monitor the inter-state import of live goat and goat products.

Additional intervention in goat sector for implementation through a partnership

- 1. Premises identification of commercial goat farms (All farms not just one receiving A I services) with IT-based real-time data generation for Herd health, Bio-security maintenance, productivity improvement, Improved trading of live goat and traceability of goat meat.
- 2. Initiatives by public/private processing plants related to supply chain development and/or contract farming.
- 3. Initiative to develop state of the art 'Livestock Protein Park' with common facility for goat meat processing to be used by incubated entrepreneurs/farmer groups/companies.
- 4. Initiative by industry association / NGOs to develop a publicly accessible database of certified goat breeding farms and contacts of other goat sector linked services for easy reference of entrepreneurs.
- 5. Initiative to provide mobile technology-based goat sector specific advisory services in the local language.
- 6. Initiative to build a brand of goat meat/meat products produced from the indigenous breed and reared under safe/natural environment.
- 7. Initiative for private goat by-product aggregation, trading activity by FIGs / FPOs / private trader.
- 8. Establishment of model small scale/community level goat slaughterhouses in rural areas and abattoirs in cities/towns.
- 9. Initiatives for hygienic retailing of goat meat/meat products.
- 10. Initiative for modernization (including biosecurity planning) of select physical markets known for major goat trading activity.

Other policy tools/initiatives relevant to the goat sector

(Preferably through the declaration of separate private investment policy)

- Additional subsidy through banks for setting up of commercial goat farms ((including Assam Hill
 Goat and other pure breeds as per farmers preference) and various sector linked private value chain
 related enterprises e.g. goat feed plant, goat meat processing plants, modern retailing outlets,
 exclusive local goat meat food joints etc.
- 2. Credit guarantees to successful goat farming related cooperatives.
- 3. Adoption of law on contract farming.
- 4. Promotion of private data management companies to support goat farm premises registration, herd health management, goat farm productivity improvement, traceability and genetic improvement.
- 5. Enforcement of goat breeding policy, mandatory data sharing with the government by private operators including traders bringing goat from outside the state.
- 6. Enforcement of guideline for health and point of origin-destination check of traded goat/goat products entering the state.
- 7. Understanding with food safety Commissionerate / local municipality and implementation of the law to regulate unsafe goat slaughter / retailing.

Poultry Sector

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal 2030	Timeline	Indicator
Poultry Veterinary Service. (Refer service delivery models)	Poultry Veterinary Service Program. (General Program) *State-level risk profiling and targeted preventive vaccination of Backyard/village poultry through engagement with community organizations / NGOs. * Promotion of deworming in village poultry. * Assistance of service-related consumables (e.g. vaccine, deworming drug) *Assistance for maintenance of District Vety. Referral Facticity (for Monitoring of Poultry disease in registered commercial farms and bio-security, awareness of pollution control related guidance amongst private operations) * Encouragement of private veterinary pharmacy service in each SVD (Ensuring assortment of drugs/feed supplements and products for use in poultry sector) * Promotions of good husbandry practices for the local backyard and low input improved birds.	To prevent the occurrence of all major poultry disease outbreak. To ensure implementation of biosecurity and pollution control related guidelines within the commercial sector. To protect and promote the livelihood of village poultry farmers through preventive care and productivity improving measures (e.g. deworming).	Continuous with a review every five years.	(1) Incidence of major poultry diseases. (2) Percent adoption of Good farm practice / Bio-security measures/ (3) Availability/access to vaccination / deworming service for village poultry.
Bio-security control infrastructure.	Assistance for bio-security control. (General Program) *Development of suitable infrastructure in inter-state border gates for	To ensure planned, sustainable growth of commercial poultry. To prevent disease outbreak.	Continuous with a review every three years.	Number of Poultry Producers Groups maintaining functional bio- security related

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal 2030	Timeline	Indicator
	monitoring of disease in live birds and the safety parameters of imported poultry products. *Support for the formation of Poultry Producers Group (Suitable Geographical location basis) for collective maintenance of separate bird /feed transport vehicle washing/disinfectant spray facility in nearby new / existing private vehicle wash points. *Capacity building support to Poultry Producer Groups for premises registration of members farms and enforcement of biosecurity / housing and pollution control related guidelines (with continuous data sharing with district poultry referral facility)	To effectively implement the standard operating procedure for disease control. To strengthen farmer level institution for collective actions, including disaster management.		(5) Number of commercial farms with premises registration card
Awareness creation for scientific feeding.	Pahu Puhon Yatra (See flagship project 6 for detail of components)	To augment the adoption of good feeding practices of village poultry (supplemental feeding) based on Scavenging Feed Resource Base (SFRB) estimation and seasonal variation thereof.	To be continued based on the evaluation.	Percent adoption of Scientific and /safe practices as measured amongst sampled farmers within the campaign area vis a vis non-campaign area
Support through existing departmental infrastructure	Rejuvenation of select government poultry farms as parent breeding/mother farms to ensure supply of pullets of Low Input Technology (LIT) Birds (General Program)	To re-shape select government farms as: (a) A parent farm of the suitable LIT bird. (b) As mother	Continuous with a review every five years.	(7) Production of Low Input Technology - LIT birds (numbers) (8) Number of private

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal 2030	Timeline	Indicator
		farm for the supply of pullets. (c) As farms to support incubated private commercial layer and other poultry (e.g. quail/ostrich farms etc.) (d) As farm to conserve local poultry breeds		incubated poultry units
Asset distribution	Assistance to women for livestock-based livelihood and nutrition (Surovi) (See Flagship Project_ 1 for details)	(1) Livelihood support, enhanced family income and improved nutrition. (2) Demand-side support for the growth of local hatcheries of LIT birds.	Three years	(9) Number of beneficiaries in the poultry sector
Training and Capacity building	Support to department / private institution for the training of poultry master farmers and farm supervisors. (General Program)	To ensure availability of master poultry farmers in each suitable panchayat for technology dissemination, setting up of farm schools etc. To ensure availability of trained supervisory manpower for private poultry related enterprises.	Three years (Fixation of yearly target based on the total number of suitable village panchayat and district level demand estimation of skill poultry farm/enterpris e supervisors.	(10) Percent suitable panchayat having active master poultry farmers. (11) Number of skill council registered poultry farmer/farm supervisors.

Activity Name	Relevant / General Program / Flagship and normal Project title	Goal 2030	Timeline	Indicator
Action plan for implemen	ntation through ALPCo			
Poultry Business Advisory	Facilitating Poultry related business advisory service. (Refer to Flagship project 5 for components)	To boost private investment in the poultry sector (both from outside and within the state) and to build the base for future private business advisory services in Assam	Three years (Project to graduate as an independent private enterprise)	(12) Established state-level private advisory company.
Entrepreneurship development	*Venture capital fund for farm input, processed product/by-product manufacturing/trading activities linked to the poultry sector. *Facilitation of participation of local enterprise in trade expos. *Innovation fund support. (Open for any innovative idea ensuring the promotion of locally produced products -where possible)	To facilitate value chain activities. To ensure the availability of critical farm input. To create a market / promote a brand of locally processed poultry products. To create a market for by-products of the poultry sector.	Continuous with a review every three years.	(13) Number of supported poultry value chain related enterprises.

NB: The above action plan takes care of SDG Action plan. The sector will also be benefited through various other cross-cutting programs (e.g. Flagship project on Trade-Related Capacity Building).

Additional intervention in poultry sector for implementation through a partnership

- 1. Initiative by industry association/federation to develop a publicly accessible database of registered poultry-related input suppliers for easy reference of entrepreneurs.
- 2. Initiative to provide mobile technology-based poultry sector-specific advisory services in the local language.
- 3. Initiative to build a brand of local chicken/duck products produced from indigenous bird and reared under safe/natural environment.
- 4. Setting up of model enterprises for aggregation, grading and branding of local eggs produced under village production system.
- 5. Initiative for private poultry by-product trading activity by FIGs / FPOs / Private trader.

- 6. Establishment of model small scale poultry processing unit.
- 7. Initiatives for hygienic retailing of poultry and poultry products.
- 8. Initiative for modernization (including biosecurity planning) of select poultry/poultry product trade points.

Other policy tools/initiatives relevant to the poultry sector

(Preferably through the declaration of separate private investment policy)

- 1. Additional subsidy through banks for setting up of breeding farms, commercial layer/broiler farms and various sector linked private value chain related enterprises, e.g. poultry feed plant, hatchery, poultry processing plants, modern retailing outlets, exclusive poultry food joints, diagnostic laboratory, by-product manufacturing etc.
- 2. Credit guarantees to successful poultry farming-related cooperatives.
- 3. Adoption of law on contract farming.
- 4. Promotion / outsourcing of private data management companies to support poultry farm premises registration and data management services to commercial poultry units.
- 5. Secondary legislation to ensure enforcement of bio-security provision and to discourage the wet chicken market.
- 6. Understanding with food safety Commissionerate and implementation of the law to regulate unsafe poultry production.
- 7. Framework agreement with State Pollution Control Board for joint drafting of guideline suitable for the state (taking Central Pollution Control Board guideline as reference) and data sharing of farms registered with the premises registration system.
- 8. Creation of risk fund to support business continuity of farms affected by disease control measures.
- 9. Concessional electricity charge (including consideration of small farms as agriculture and allied activity for the purpose of electricity tariff)
- 10. Publication of map of poultry cluster growth based on data generated through premises registration for streamlining of growth and disaster planning.
- 11. Strengthening of regional feed testing laboratory to prevent marketing of sub-standards poultry feed and to assist local feed miller in maintaining their product quality.
- 12. Support to the formation of state-level federation of producer groups for collective actions to maintain ethical market practices and to ensure industry level monitoring of risky practices.
- 13. Policy decision (where required) for the inclusion of locally produced poultry products in school feeding programs.
- 14. Facilitation of feed crop (e.g. Maize, soybean, coarse grain) cultivation / appropriate harvesting through various support program of Agriculture department.