



**The World Bank**

India Animal Health System Support for Improved One Health (AHSSOH) (P177671)

## Program Information Documents (PID)

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Appraisal Stage | Date Prepared/Updated: 29-Jun-2022 | Report No: PIDA265130

**BASIC INFORMATION****A. Basic Program Data**

Country India	Project ID P177671	Program Name India Animal Health System Support for Improved One Health (AHSSOH)	Parent Project ID (if any)
Region SOUTH ASIA	Estimated Appraisal Date 08-Jul-2022	Estimated Board Date 15-Sep-2022	Practice Area (Lead) Agriculture and Food
Financing Instrument Program-for-Results Financing	Borrower(s) India	Implementing Agency Ministry of Fisheries, Animal Husbandry & Dairying, Department of Animal Husbandry & Dairying	

## Proposed Program Development Objective(s)

The Program Development Objective is to increase the quality and coverage of animal health services for livestock farmers and to improve One Health coordination in selected states.

**COST & FINANCING****SUMMARY (USD Millions)**

<b>Government program Cost</b>	164.00
<b>Total Operation Cost</b>	82.00
Total Program Cost	82.00
<b>Total Financing</b>	82.00
<b>Financing Gap</b>	0.00

**FINANCING (USD Millions)**

<b>Total World Bank Group Financing</b>	82.00
World Bank Lending	82.00

## Decision

The review did authorize the team to appraise and negotiate



## B. Introduction and Context

### Country Context

1. **Following a period of growth deceleration, India's growth rebound in FY22 has been quick, pulled up by investment, recovering consumer demand and, more importantly, a low base.** Real Gross Domestic Product (GDP) growth moderated from an average of 7.4 percent during FY15/16-FY18/19 to an estimated 3.7 percent in FY19/20, mostly due to (i) shocks to the financial sector, and (ii) decline in private consumption growth. Against this backdrop, the outbreak of COVID-19 had a significant impact, with real GDP contracting by 6.6 percent in FY20/21<sup>1</sup>. On the fiscal side, the general government deficit widened significantly in FY20/21, owing to higher spending and low revenues<sup>2</sup>. However, with the easing of COVID-19 restrictions, Goods and Services Tax (GST) collections have crossed INR 1.1 trillion mark every month since July 2021 and robust GST revenues are expected to continue as the economic recovery gathers momentum. The real GDP growth<sup>3</sup> for FY21/22 is likely to be in the range of 7.5 to 12.5 percent, on the back of increased capital expenditure by the government and recovering consumer demand. Given the global concerns on significant uncertainty around the pandemic, elevated inflation, geo-political tensions and extended supply disruptions, growth in FY22/23 is expected to be 8.7 percent<sup>4</sup> making India among the world's fastest-growing economies over the next two years.
2. **Although India has made remarkable progress in reducing absolute poverty in recent years, the COVID-19 pandemic has delayed the course of poverty reduction<sup>5</sup>.** Between 2012 and 2017, India's poverty rate is estimated to have declined from 22.5 percent<sup>6</sup> to values ranging from 8.1 to 11.3 percent<sup>7</sup>. However, recent projections of GDP per capita growth, taking into account the impact of the pandemic, suggest that poverty rates in 2020 have likely reverted to estimated levels in 2016<sup>8</sup>. Labor market indicators from high frequency surveys—including from the Centre for Monitoring Indian Economy (CMIE)—suggest that vulnerability has increased, particularly for urban households. Overall, the pandemic and its economic impacts are estimated to have raised urban poverty, creating a set of “new poor” that are relatively more likely to be engaged in the non-farm sector and to have received at least secondary education.

### Sectoral and Institutional Context

3. **India has one of the largest livestock populations in the world, with the sector significantly contributing to India's agricultural GDP.** The livestock census (2019) estimates India's livestock population at 536 million. Globally, India has the largest buffalo population, and the second largest cattle and goat populations. The livestock sector contributes about 27 percent to agricultural GDP, which amounted to

<sup>1</sup> National Accounts Data, National Statistical Office, Ministry of Statistics and Program Implementation (MOSPI).

<sup>2</sup> Union budget 2021, 2022, Ministry of Finance.

<sup>3</sup> World Bank Global Economic Prospects, January 2022.

<sup>4</sup> World Bank real GDP forecasts for FY22/23 published in January 2022 are broadly in line with the projections of the Government of India.

<sup>5</sup> World Bank projections. The Government of India has deployed significant resources for social assistance, including towards urban poor households and migrants.

<sup>6</sup> Consumption Expenditure Survey 2011-12, National Sample Survey Office (NSSO), Government of India.

<sup>7</sup> World Bank estimates. Source: Poverty and Shared Prosperity Report, 2020.

<sup>8</sup> World Bank estimates. Source: Macro Poverty Outlook, 2020.



US\$ 91.66 billion in 2019.<sup>9</sup> The sector employs 50 percent of the workforce engaged in agriculture, and it plays a significant role in the livelihoods of millions of people working in the rural economy. There are an estimated 70 million small-scale dairy farms in the country. At the same time, a lack of awareness about good animal husbandry practices and weak monitoring of food safety in animal-sourced products contribute to disease outbreaks and economic losses. The estimated economic burden of food-borne diseases (FBD) in India is approximately US\$15 billion<sup>10</sup> per year, including productivity losses and the costs of treating illnesses. FBDs disproportionately affect children under five years old and are one of the main drivers of stunting.<sup>11</sup> For example, pathogenic bacteria, such as *Salmonella*, are commonly found in meat, poultry, seafood and *khoa* in India.<sup>12</sup> The implementation of disease control mechanisms and food safety standards at critical risk points, including slaughter facilities and informal cattle markets is weak, thereby contributing to FBD and animal disease outbreaks.

4. **India is a hotspot for animal disease outbreaks that have led to enormous economic costs, estimated at more than US\$3.3 billion<sup>13</sup> annually.** In India, 68 percent of the workforce relies on farming and remains in close contact with domestic animals and poultry, thereby becoming frequently exposed to sick or infected animals, posing risks of disease outbreaks. Indeed, there has been a high incidence of endemic zoonotic diseases, including Rabies, Brucellosis, Toxoplasmosis, Cysticercosis, Echinococcosis, Japanese Encephalitis (JE), Leptospirosis, Scrub Typhus, Zoonotic Tuberculosis, and Kyasanur Forest Disease (KFD). In this regard, Foot and Mouth Disease (FMD) outbreaks alone are estimated to result in about US\$3.3 billion in annual losses through low productivity, animal mortality and income losses due to reduced export revenues. It is indeed concerning that women face multiple barriers in accessing animal health services; thus, targeted interventions are needed to address these barriers as they are most at risk of zoonoses. This is because, (i) rural women provide over 75 percent of production labor, including milking; animal health; manure management; etc. yet, face many constraints, including a lack of awareness and access to veterinary and extension services. Pregnant women are highly vulnerable to zoonoses exposure with risks of miscarriages; and (ii) women scientists also face limited leadership opportunities leading to gender disparities in management roles; Veterinarians and para-vets are also more at risk of zoonoses — and over 70 percent of veterinary students are female. These gaps and constraints highlight the need for greater capacity development in terms of awareness and training, as well as appropriate biosafety and biosecurity practices.
5. **Wildlife-livestock-human transmission risks are increasing rapidly.** India is one of 17 mega-diverse countries, with 7-8 percent of recorded species on 2.4 percent of the earth's land area. Although India has taken significant measures to protect its forest areas (currently about 24 percent of India's geographic areas), the quality of forests is degrading in several pockets due to the continued extraction of firewood

<sup>9</sup> Trading Economics. www.radingeconomics.com. (2019).

<sup>10</sup> The World Bank Group." *The Safe Food Imperative*". Steven Jaffee and others. (2016).

<sup>11</sup> Stunting is very high in India, impacting 35 percent of under five-year-old children (40 million).

<sup>12</sup> Singh, P. et al. (2018)." *Prevalence of Salmonella spp in Milk and Milk products. Asian Journal of Dairy and Food Research.* Vol: 37 (1) p. 12

<sup>13</sup> The Hindy Businessline.(2022). <https://www.thehindubusinessline.com/opinion/livestock-sector-needs-investment-fodder/article38223763.ece>; James A, and Rushton J. (2002). *The Economics of Food and Mouth Disease.* Rev. sci. tech. Off. int. Epiz. 21 (3), 637-644.



and open grazing practices by forest-fringe livestock owners. These forest-fringe populations are exposed to increased risk of zoonotic diseases that jump to livestock and/or humans. Factors relating to the wildlife sector that increase zoonotic disease transmission risks include a lack of systematic disease surveillance, inadequate veterinary capacity, a lack of unified protocols with livestock and human health, and a lack of a consolidated database concerning wildlife disease incidents.

6. **The threat of future pandemics from diseases of animal origin is real. The main risk factors are weak disease surveillance, diagnosis and reporting in the livestock and wildlife sectors, emerging pests, as well as diseases due to climate change and land-use changes.** Diseases of animal origin continue to pose global risks to public health systems. *About 60 percent of pathogens that cause human diseases come from domestic animals or wildlife, and 75 percent of emerging human pathogens are of animal origin.*<sup>14</sup> With climate change and more interaction of the human population with wildlife, these threats are intensifying — especially given the projected growth in the demand and production of animal-sourced products in India, combined with the importance of the livestock sector for the livelihoods of the poor. Therefore, improving disease management capacity is imperative to reducing the risks of spillover of diseases to people. Of all the global microbial pathogens, 61 percent are zoonoses.

#### PforR Program Scope

7. **The Government of India is cognizant of these challenges and is moving to ensure that the core capacity for animal health management in India needs strengthening and that a One Health approach is required for the effective prevention of zoonotic-related pandemics and outbreaks.** The Department of Animal Husbandry and Dairying (DAHD) is implementing an overarching animal health management program, namely the Livestock Health and Disease Control Program (LHDCP). The program consists of: (i) an umbrella Livestock Health and Disease Control Scheme (LHDCS) with sub-components targeting the upgrading of veterinary facilities, control of Classical Swine Fever (CSF) and *Peste des Petits Ruminants* (PPR); and (ii) the National Animal Disease Control Program (NADCP), with two sub-schemes for the control of Food and Mouth Disease (FMD) and Brucellosis. The key objectives of the LHDCP are to maintain a healthy, disease-free livestock population and prevent various zoonotic diseases. The National Animal Disease Control Program (NADCP) seeks to control FMD and Brucellosis by 2025 with vaccinations, and to eradicate them by 2030.
8. **The budgetary allocation for the overall government program ("p") for 2021-26 is at US\$1.2 billion.** The proposed PforR Program ("P") is a subset of the government program ("p") with a program boundary of US\$164 million. It supports interventions for institutional capacity building, systems development, and improving the quality and coverage of diagnostic and veterinary services. It will be financed in the amount of US\$82 million by the International Bank for Reconstruction and Development (IBRD) and a US\$82 million by the GoI. The PforR will be implemented in the states of Assam, Karnataka, Maharashtra, Odisha, and Madhya Pradesh, which collectively hold about 138.8 million livestock, amounting to 26 percent of India's total livestock.
9. **The Program for Results focuses on building systemic capacity for animal health management and OH coordination; as such, it will enhance the impact of the larger government program expenditures.** To achieve this, the AHSSOH program is supporting a fundamental shift in the nature of the Ministry of

<sup>14</sup> [www.oie.org](http://www.oie.org)



Fisheries Animal Husbandry and Dairying (MoFAHD)'s support architecture through the LHDCP. This includes strengthening the capacity of Participating States to implement the LHDCP as an integrated program with clearly defined outcomes rather than a set of animal health schemes. It will also adapt the program to focus on priority diseases and high-risk geographies based on state context. In addition, the AHSSOH will support the capacity of the DAHD to implement and monitor the LHDCP at the national level.

### C. Proposed Program Development Objective(s)

#### Program Development Objective(s)

10. The Program Development Objective is to increase the quality and coverage of animal health services for livestock farmers and to improve One Health coordination in selected states.
11. The following indicators will be used to measure progress towards the PDO:
  - Laboratories operating under improved quality assurance and quality control procedures (number).
  - Livestock farmers with increased access to improved animal health services (disaggregated by gender).
  - Digital disease surveillance system operating at the program state level (number).
  - One Health joint actions covering animal, wildlife and human health implemented (Yes/No)
    - (i) Functioning OH platforms established in each program state.
    - (ii) Joint coordination plan for identified state zoonotic diseases and AMR.
  - Number of livestock farmers adopting biosecurity measures (number; disaggregated by gender).

#### Description of the Program RAs:

12. The Program will support the following five RAs that contribute to the overall outcomes of the Government Program.
13. **RA 1 – Strengthening Institutional Capacity for Implementation and Coordination of the One Health (OH) Approach.** RA 1 aims to improve institutional capacity to implement an effective animal health management program, as well as to establish functioning coordination mechanisms for specific One Health action areas. RA 1 will support improved capacity across the nodal national and state-level institutions responsible for livestock, wildlife, and human health. It will also conduct a detailed diagnostic exercise and develop State Strategic Plans (SSPs) for animal health and zoonoses management, as well as for the State's One Health framework. These SSPs will form the basis for program financing and implementation in the Participating States. In addition, RA 1 is expected to strengthen joint planning, surveillance, and implementation of integrated disease management strategies, including clear, measurable goals. Activities under RA 1 will include:
  - a. conducting a diagnostic assessment to identify disease risks, capacity constraints, quality, and capacity utilization of existing animal health infrastructure; (ii) developing SSPs, which will include the states' One Health frameworks
  - b. training and capacity building for staff (with state-level targets for female staff) in the stakeholder departments and agencies
  - c. developing national quality standards, including animal health service provision, the mapping and



- benchmarking of animal health infrastructure, and manpower and training facilities against such standards
  - d. establishing One Health Steering Committees (OHSCs) for OH coordination across different Ministries to operationalize coordination mechanisms for selected OH actions
  - e. implementing joint research platforms with national and international institutions concerning specific aspects of One Health
- 14. RA 2 – Enhancing Diagnostic Capacity for Effective and Timely Disease Diagnosis.** RA 2 aims to strengthen the diagnostic capacity for animal diseases at the district, state, regional and national levels to facilitate timely, quality diagnosis and effective responses to disease outbreaks. Activities under RA 2 include: (i) the physical upgrading of diagnostic facilities at the district, state, regional and national levels; (ii) the development and adoption of service standards for faster, more accurate disease screening; (iii) the adoption of best practice protocols and accreditation of laboratories with the relevant national and international standards; (iv) the development and implementation of a laboratory information system for effective information and data sharing; (v) the enhancement and the availability of economical, kit-based diagnostics to increase last-mile diagnostic service provision; and (vi) training and capacity building of laboratory staff, field-level veterinarians, para-vets and forest department staff (including training in field epidemiology). Joint training and improving diagnostic effectiveness are key OH elements related to diagnostics. The Program will also support the state disease diagnostic laboratory in establishing an epidemiological unit, as well as in building the capacity of the unit to conduct disease surveillance and epidemiology with support from national and international institutes. RA 1 will be guided by the following:
- a. The specific upgrading activities will be informed by a detailed needs assessment/diagnostic (under RA 1) regarding infrastructure, manpower, capacities, current level utilization, as well as the potential needs based on emerging challenges and state requirements.
  - b. The diagnostic assessment under the guidance of the National Accreditation Board for Testing and Calibration Laboratories (NABL) will evaluate the laboratory system and protocols followed in the laboratories from the point of sample collection to results communications. It will also review the existing standards.
  - c. The Program will support developing and implementing a laboratory information management system (LIMS) to enhance effective information sharing and timely communication of results. In addition, the program will support increased adoption of low-cost economical kit-based diagnostics to extend the speed and effectiveness of diagnostic services in remote areas.
- 15. RA 3: Increasing Access to Quality Veterinary Services.** This RA aims to increase the access of livestock farmers to quality veterinary services. The activities under RA 3 include: (i) the upgrading of veterinary hospitals and dispensaries to meet minimum national standards; (ii) the scaling up of the use of the MVUs for last-mile service provision, with a particular focus on women farmers and rearers; (iii) an increase in services in underserved locations of program areas; (iv) developing model veterinary hospitals and model livestock markets in a cluster of districts; and (v) capacity building of para-vets and community health workers through induction and refresher training. This will help to increase the strength of the workforce, as well as the quality of services. RA 3 will also incorporate capacity-building sessions linking the impacts of climate change and heat stress on animal health to relevant stakeholders. As such, it will also explore the deployment of solar-powered mobile veterinary units.



16. **RA 3 will target training, equipping, and certifying women para-vets and Community Health Workers (CHWs).** As community para-veterinary workers, the women will play a critical role in the provision of last-mile livestock services. This RA will also assess gaps in existing service provision to women farmers and rearers. As such, it will add service provision options, for example, flexible timing, home delivery of services, and village-level support networks. Under this RA, the Program will mobilize women paraprofessionals and offer targeted training programs to them with the objective of increasing the proportion of women animal health trained and accredited animal health professionals to 50 percent in the Participating States.
17. **RA 4- Enhancing surveillance capacity for effective disease reporting and monitoring.** RA 4 aims to strengthen the surveillance of animal diseases, including zoonoses. It will also operationalize OH in disease surveillance. The activities under RA4 include: (i) developing integrated information technology platforms and mobile applications for disease reporting, that would be aligned with and able to feed information into human disease reporting platforms; (ii) integrating wildlife disease surveillance in the National Digital Livestock Mission (NDLM); (iii) the training and onboarding of forest department staff to disease-reporting platforms; (iv) capacity building of personnel dealing with animal, human and wildlife, specifically to strengthen disease monitoring in high-risk locations and protected areas; and (v) strengthening the capacity of the FSSAI to test animal-sourced products, as well as initiating coordination with the DAHD to promote food safety in animal products. Integrating wildlife disease surveillance into the NDLM directly contributes to OH, given the significant origin of zoonoses from the animal and wildlife sectors. Also, improving surveillance will contribute to early detection and prevention. The World Bank, in partnership with technical institutions, will provide technical support to DAHD, to use the improved surveillance data to inform decision making on allocation of budgets and adjusting implementation strategies for priority diseases. RA 4 will focus on:
  - a. Developing integrated IT platforms and mobile applications for livestock and wildlife disease reporting, surveillance, and epidemiology. The program will provide support for integration of wildlife disease reporting on linking critical data across animal health services including disease diagnostics, treatment, animal identification and vaccination status in an integrated into the NDLM database.
  - b. Strengthening forecasting for priority animal diseases by supporting states to use disease forecasts to target interventions. The program will support building the capacity of the Indian Council of Agricultural Research (ICAR) National Institute of Veterinary Epidemiology and Disease Informatics (NIVEDI), specifically, epidemiology, disease forecasting and disease economics modeling. The program will support states in establishing epidemiological units responsible for supplying data at regular intervals to the Central Epidemiological unit, the ICAR-NIVEDI, as well as for sharing the epidemiological reports with other departments, including the Health Department, the Forestry Department and the FSSAI.
  - c. Capacity building of animal health, human health, and wildlife personnel to strengthen disease surveillance, monitoring, and epidemiology. Key personnel will be trained in planning, designing, and implementing epidemiological studies, as well as in data analysis and reporting. District- and block-level staff under the Veterinary and Wildlife Departments will also receive training to improve their knowledge and skills regarding field epidemiology, biological sample collection, data, and information collection for disease surveillance, monitoring, and epidemiology. The Program will share resources with the Wildlife and Forestry Department to ensure the collection of biological samples from wild animals, as well as domestic animals in the fringe areas of forestry.



**18. RA 5 - Increasing Community Awareness of Animal Disease Management Practices and Zoonoses.** RA 5 aims to increase community awareness about animal disease management practices by farmers and other value chain actors. This will help to minimize the risks of zoonoses. The main areas of support include: (i) conducting community awareness campaigns about zoonotic diseases, disease prevention and reporting requirements with a specific focus on pregnant women and young mothers; (ii) building the capacity of livestock farmers to maintain the GAHP necessary to strengthen biosecurity and biosafety measures at the farm level; and (iii) improving disease management capacity and practices in high-risk sites — including livestock markets, abattoirs, slaughterhouses, and informal markets. Training will include guidance and awareness building about food hygiene, with a focus on women. This will help to increase food safety at the household level. RA 5 will also contribute to OH by reducing the risks of zoonoses and AMR at the community level. In addition, RA 5 will support specific behavior change, awareness and information campaigns tailored to women farmers, as well as laborers vis-a-vis disease management including zoonoses. It will also support training on the GAHPs, including biosafety measures, good practices in food hygiene and food safety. Capacity building at the farm level will include training farmers on biosecurity measures to minimize disease spread, as well as animal health management practices. These will include the use of ethno-veterinary medicine, knowledge and awareness about AMR, proper manure management, as well as other practices that promote animal health and nutrition.

#### D. Environmental and Social Effects

- 19. Environmental and Social Systems Assessment (ESSA)** for the AHSSOH Program has been completed in line with the World Bank Guidance for conducting ESSAs for Program for Results (PforR) financing operations. The ESSA assesses the gaps in the existing institutional, operational, and regulatory systems and capacities to manage Environmental and Social (E&S) risks and recommends measures for strengthening them.
- 20. The overall E&S risk has been rated as ‘Moderate’.** The key environmental risks relate to biosafety in laboratories and diagnostic facilities; and management of biomedical waste (including liquid, pharmaceutical, carcass and other hazardous waste) in the MVUs, laboratories, veterinary clinics, slaughterhouses, and wet markets/local markets in urban and rural areas. The key social risks are related to occupational health and safety risks of workers in diagnostic facilities and waste management activities; and community health and safety risks associated with biomedical waste management in urban and rural areas. Other social issues are related to poor access to quality veterinary services in remote, hilly, and difficult to reach areas, including tribal areas; weak training and capacity of frontline animal health workers, including para-vets and community workers on community health and safety measures; and low community awareness about AH and zoonotic diseases, especially among smallholders and women livestock rearers.
- 21. Recommended E&S measures.** Environmental risk mitigation will focus on (i) biosafety; (ii) biomedical waste management; and (iii) incorporation of environmental measures in the design, construction, and operation of diagnostic facilities/ laboratories and veterinary service facilities, including screening for environmental and social risks. On the social side, risk mitigation will include the following measures, among others: (i) training of occupational and community health and safety measures for lab workers, para-veterinarians, and communities; (ii) outreach to remote tribal pockets; (iii) community engagement and awareness building on improved animal health management and One Health including communication



campaigns, and (iv) strengthening the coordination mechanism with other departments, Panchayati Raj Institutions (PRIs) and local governments.

22. **Stakeholder Consultations and Disclosure.** Multiple rounds of stakeholder consultations, workshops and meetings were held with program officials from the Assam, Karnataka, Maharashtra, Odisha, and Madhya Pradesh States, as well as officials from other agencies. The consultations and discussions focused on existing mechanisms, capacities, and practices concerning key environmental and social aspects in the AH sector. These interactions were conducted through a virtual mode, as In-person meetings were restricted due to COVID-19 travel restrictions/protocols. Draft ESSA was disclosed to program officials as well as NGOs, CBOs and field-level officials from program states were held during project appraisal. Two dedicated ESSA workshops were conducted on June 22<sup>nd</sup>, 2022, and on June 24<sup>th</sup>, 2022. The draft ESSA report was disclosed on Bank's portal (5<sup>th</sup> June 2022) and shared with the DAHD program states for their comments and feedback. The final revised ESSA report will be re-disclosed on government's website and Bank's portal.
23. **Climate co-benefits:** Climate Co-Benefits: The PforR's contribution to reducing greenhouse gas (GHG) emission will be derived from improving animal productivity through enhanced health and disease management, as well as the training of livestock farmers on GAHPs. The GAHPs supported through the program will include: (i) better health management of livestock and disease management practices, which will improve animal productivity, thereby helping to reduce emissions; (ii) better manure management practices and use of manure for biogas to reduce emissions; and (iii) other climate-smart related activities that are relevant in specific cases and areas of the program.
24. **Gender interventions:** The Program has a strong gender focus and will integrate gender interventions under relevant RAs. The program will support enhanced participation of women in capacity building activities and gender segregated data of training activities supported by the program will be monitored closely.

## E. Financing

### Program Financing (Template)

Sources	Amount (USD Million)	% of Total
International Bank for Reconstruction and Development (IBRD)	82.00	100.00
<b>Total Program Financing</b>	<b>82.00</b>	

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Implementing Agency :	Ministry of Fisheries, Animal Husbandry & Dairying, Department of Animal Husbandry & Dairying		
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