Program Information Document (PID)

Concept Stage | Date Prepared/Updated: 23-Nov-2021 | Report No:

BASIC INFORMATION

A. Basic Program Data

Country	Project ID	Parent Project ID (if any)	Program Name
India	P177671		India Animal Health System Support for Improved One Health (AHSSOH)
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Does this operation have an IPF component?**
SOUTH ASIA	19-May-2022	25-Aug-2022	No
Financing Instrument	**Borrower(s)**	**Implementing Agency**	**Practice Area (Lead)**
Program-for-Results Financing	Republic of India	Ministry of Fisheries, Animal Husbandry & Dairying, Department of Animal Husbandry & Dairying	Agriculture and Food

Proposed Program Development Objective(s)

The project development objective is to increase institutional capacity to effectively provide animal health services to livestock farmers in selected states using a One Health framework.

COST & FINANCING

SUMMARY (USD Millions)

Government program Cost	293.00
Total Operation Cost	82.00
Total Program Cost	82.00
Total Financing	82.00
Financing Gap	0.00

FINANCING (USD Millions)

Total World Bank Group Financing	82.00
World Bank Lending	82.00

Concept Review Decision

B. Introduction and Context

Country Context

1. ***India's Gross Domestic Product (GDP) growth was already slowing when the COVID-19 outbreak unfolded.*** Real GDP growth moderated from an average of 7.4 percent during FY15/16-FY18/19 to an estimated 4.0 percent in FY19/20[i] The growth deceleration was mostly due to (i) shocks to the financial sector, and (ii) decline in private consumption growth[ii]. Against this backdrop of pre-existing weaknesses, the outbreak of COVID-19 had a significant impact, with real GDP contracting by 7.3 percent in FY20/21[iii]. On the fiscal side, the general government deficit widened significantly in FY20/21, owing to higher spending and low revenues[iv.] Given the significant uncertainty pertaining to epidemiological developments, real GDP growth for FY21/22 is likely to be in the range of 7.5 to 12.5 percent[v.]

2. ***Although India has made remarkable progress in reducing absolute poverty in recent years, the COVID-19 outbreak has delayed the course of poverty reduction[vi].*** Between 2011-12 and 2017, India's poverty rate is estimated to have declined from 22.5 percent[vii] to values ranging from 8.1 to 11.3 percent[viii]. 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. 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 (or multi-sectoral) and Institutional Context of the Program

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[ix]. Globally, India has the largest buffalo population, and the second largest cattle and goat populations. It also has one of the largest poultry markets. The livestock sector contributes about 27 percent to agricultural GDP, which amounted to US$ 91.66 billion in 2019.[x] The sector employs 50 percent of the workforce engaged in agriculture and plays it 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. Livestock is the main source of livelihoods for small and marginal farmers[xi,] contributing to food and nutrition security through the consumption of milk, eggs, and meat, as well as to farm incomes through the sale of livestock and livestock products. Furthermore, livestock is an important asset for many rural households, providing draught power, manure for agricultural production, and insurance against extreme weather effects that tend to disproportionately affect the crop sector.

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[i] National Accounts Data, National Statistical Office, Ministry of Statistics and Program Implementation (MOSPI).
[ii] National Accounts Data, National Statistical Office, MOSPI.
[iii] National Accounts Data, National Statistical Office, MOSPI.
[iv] Union budget for 2021 and 2022, Ministry of Finance.
[v] World Bank, Global Economic Prospects, July 2021.
[vi] World Bank projections. The Government of India has deployed significant resources for social assistance, including urban poor households and migrants.
[vii] Consumption Expenditure Survey 2011-12, National Sample Survey Office (NSSO), Government of India.
[viii] World Bank estimates and World Bank, *Poverty and Shared Prosperity Report*, 2020.
[ix] This includes 192 million cattle, 109 million buffaloes, 74 million sheep, 148.2 million goats, and about 9 million pigs.
[x] Trading Economics. www. radingeconomics.com. (2019).
[xi] Bora, N. (2017). "Vulnerability of the Livestock Sector to Climate Change Condition: A Case of India". *International Journal of Environment, Agriculture and Biotechnology* (IJEAB). Vol. 2, Issue 1.

4. **India is a hotspot for animal disease outbreaks that have led to enormous economic costs, estimated at more than U$3.3 billion annually.** In India, 68 percent of the workforce relies on farming and remains in close contact with domestic animals and poultry, thereby being frequently exposed to sick or infected animals. The high exposure between livestock, people and wildlife poses risks of disease outbreaks. There have been high incidences of endemic zoonotic diseases, including Rabies, Brucellosis, Toxoplasmosis, Cysticercosis, Echinococcosis, Japanese Encephalitis (JE), Leptospirosis, Scrub Typhus, Zoonotic Tuberculosis, and Kyasanur Forest Disease (KFD). Foot and Mouth Disease (FMD) outbreaks alone are estimated to result in about US$3.3 billion in annual losses through the high mortality of animals, low productivity, and income losses due to reduced export revenues. More recently, the African Swine Fever (ASF) outbreak in March 2020 killed more than 100,000 pigs in some of the northeastern states.[xii] Zoonotic disease outbreaks have also been occurring at regular intervals in India. They include: Leptospirosis (2005), the Avian Flu (2006, 2020), NIPAH (2018); SARS (2003), COVID-19 (2020) and the bubonic and pneumonic plague (1994). Addressing animal disease outbreaks is becoming increasingly challenging due to high livestock density, the growing livestock population, as well as weak animal disease surveillance.

5. **Lack of awareness about good animal husbandry practices and weak food safety enforcement also contribute to disease outbreaks, causing significant economic losses.** The estimated economic burden of food-borne diseases (FBD) in India is approximately US$15 billion per year, including productivity losses, the costs of treating illnesses and trade-related lossesxiii. Globally, Asia and Africa have the highest burden of food-borne diseases, with India bearing the second largest cost of FBD globally. Furthermore, FBDs disproportionately affect children under five years old and are one of the main drivers of stunting.xiv Animal products (and fresh produce) are a major source of food-borne diseases and contribute significantly to the economic burden of FBDs. For example, pathogenic bacteria, such as Salmonella, are commonly found in meat, poultry, seafood and khoa in India.xv Similarly, E coli 0157 is commonly found in meat, milk, *paneer*, and ice cream.xvi India has more than 1,176 slaughterhouses and 75 modern abattoirs, as well as hundreds of illegal slaughterhouses. The implementation of disease control mechanisms and food safety standards at critical risk points including slaughter facilities and informal cattle markets is poor and contributes to food-borne disease and animal disease outbreaks.

6. **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. While India has taken significant measures to protect its forest areas well (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 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. The key issues in the wildlife sector that increase zoonotic disease transmission risks include a lack of systematic disease surveillance, inadequate veterinary capacity, lack of unified protocols with livestock and human health, and lack of a consolidated database on wildlife disease incidence. Addressing these gaps are critical to enhancing, disease prediction and early warning capabilities.

7. **The threat of future pandemics from diseases of animal origin is real.** The main risk factors are weak disease surveillance, diagnosis and reporting in 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

[xii] www.feedstrategy.com,
[xiii] The World Bank Group." *The Safe Food Imperative*". Steven Jaffee and others. (2016).
[xiv] Stunting is very high in India, impacting 35 percent of under five-year-old children (40 million).
[xv] 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
[xvi] Rao, S. et al, (2012),"*Foodborne diseases in India – A Review*". Food Journal. Vol. 114 (5) pp. 661 – 680.

human pathogens are of animal origin.xvii 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, and zoonotic diseases continue to pose a large economic burden on the public.

8. **Animal diseases are a major driver of reduced animal productivity and increased emission intensity**. The OIExviii estimates that, on average, 20 percent of animal productivity losses globally can be attributed to animal diseases. Improved animal health contributes to greater gains in efficiency and productivity, which in turn helps to reduce the GHG intensity of livestock farming. India has the largest cattle population in the world, but the lowest beef consumption of any country. Thus, cows live longer and emit more methane over their lifetimes. Improving animal health management, including measures to prevent diseases, can contribute to reducing GHG emissions deriving from the livestock sector in India. The AHSSOH is expected to help reduce GHG emissions from the livestock sector over the long term.

9. **The core capacity for animal health management in India needs strengthening.** Periodic disease outbreaks highlight the need for better coordination of responses, as well as investments in the capacity to control animal disease outbreaks and improvements in the overall animal health management systems. The need to build the core capacity to better prevent, detect and control emerging infectious zoonotic diseases has been painfully demonstrated by the COVID-19 pandemic and recent outbreaks of other zoonoses. While there are several government schemes targeting specific animal diseases, the management of diseases has largely been reactive and focused more on containment measures to prevent the spread of animal diseases during outbreaks rather than on preventative measures, such as improved livestock management systems, disease surveillance and testing, and so on. The underlying capacity of animal disease management in India is weak, which increases the risks of disease spillover from animals to people. Operationalizing more effective "One Health" coordination is predicated on strengthening core aspects of animal disease management, particularly disease surveillance, the capacity for timely and accurate disease diagnosis, and provision of quality veterinary services. On the wildlife side, this would require building national and sub-national capacity for disease surveillance and reporting, which can be integrated with animal and human disease reporting on a single digital platform. Furthermore, work is needed to identify potential hotspots for harmful pathogens, as well as to promote decentralized coordination at the state and field- level between wildlife, animal health and human health departments.

10. **The Department of Animal Husbandry and Dairying (DAHD) launched several schemes to strengthen animal health management. The implementation of the overall set of animal health management schemes has achieved some results. However, key challenges remain, including institutional strengthening to enhance the results orientation of such programs, and to adopt a One-Health approach.**

11. The main challenges include:

- *Veterinary manpower shortages and low quality of training and oversight*. At the country level, a mere 34,500 field veterinarians are employed for field services as compared to a requirement of 67,000. There is a gap of around 50 percent in the number of available para-veterinarians. The existing veterinary technicians and field support staff (52,000 actively employed) meet less than 20 percent of the need on the ground.xix There is also a lack of epidemiology training and knowledge among veterinarians, as well as poor service provision capacity by paraprofessionals.

[xvii] www.oie.org

- *Diagnostic capacity*. There is a lack of a standardized sampling framework; training and incentives to field staff to collect and transport samples following proper handling protocols; few diagnostic facilities at the district level; and weak infrastructure and systems for last-mile veterinary service provision and disease diagnostics
- *Disease surveillance and reporting challenges*. Gaps include lack of access to disease reporting systems by last-mile staff, and a lack of systematic training and poor incentives for staff to use such systems. Awareness among farmers about the need to report is also a challenge. There is also an issue concerning weak coordination with the staff of the wildlife/forest department at the state level for integrating wildlife disease surveillance.

12. **A One Health approach is required for the effective prevention of zoonotic-related pandemics and outbreaks.** The One Health approach emphasizes multidisciplinary collaboration for holistic interventions to help reduce disease risks by improving human, animal, and environmental health through enhanced control of neglected and emerging infectious diseases, many of which are zoonoses. A pre-requisite for an effective One Health approach is improved collaboration and coordination between the fragmented institutional landscape across human and animal health, including wildlife and food safety.

13. **There is a history of public investment in strengthening aspects of the One Health framework in India**, and various specialized public sector institutions have been created in areas from food safety to animal disease forecasting. India was one of the pioneers in adopting the One Health framework, hosting the International Ministerial Conference on One Health in 2007 that adopted core One Health principles. It also established various high-level One Health Committees, with the most recent high-level Committee on Eco-Health established by the Ministry of Health and Family Welfare (MoHFW) in 2020. However, the operationalization of One Health activities and coordination on the technical level between animal and human health has been weak. There is little sharing of information and data between relevant institutions. For example, both rabies control and Anti-Microbial Resistance management are fragmented between health and animal health services, thereby limiting their effectiveness. Reducing zoonotic disease risk and effective disease management requires integrated surveillance and management strategies between animal (including wildlife) and human health.

14. **Women face multiple barriers in accessing animal health services and targeted interventions are needed to address these barriers. Rural women are key stakeholders in the livestock sector**. They provide over 50 percent of production labor - managing animal fodder and nutrition, and handling livestock, as well as engaging in animal health and care. Women livestock farmers are therefore more vulnerable to exposure from infected animals and animal diseases. Yet women face many constraints including lack of access to distant veterinary facilities; and extension, awareness and training interventions and service delivery pathways focusing on male farmers. Although women livestock paraprofessionals (Pashu Sakhis) play a significant role in offering last mile service support to smallholders, they face additional constraints including inflexible working conditions, access to technology, recognized accreditation, and ability to earn a minimum income from service provision.

15. **Climate change has many multiplier effects on animal health**. With the increasing temperatures, the most significant direct impact comes from heat stress that that negatively impacts animal welfare and productivity. Heat stress causes metabolic alterations and oxidative stress, and suppresses the immune and endocrine system, thereby resulting in an increased propensity for disease incidence, animal death and reduced productivity. Research projects that heat stress will reduce milk production in India to the tune of 15 million tons by 2050[1], which may pose significant financial burden to livestock producers. Furthermore, extreme events including severe droughts, extreme

[1] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4823286/

precipitation events, and coastal floods, among others, have direct impacts on livestock. For example, the 1999 Orrisa cyclone claimed 4.45 lakh livestock, while the 2013 Uttarakhand floods affected 9470 livestock[2]. The indirect effects include climate influences on pathogen density and distribution, and multiplication of vectors and vector-borne diseases and soil-, food-, and water-borne diseases.

Relationship to CAS/CPF

16. **The proposed Animal Health System Support for Improved One Health (AHSSOH) project aligns directly with the India Country Partnership Framework (FY18–22) and focuses on the CPF priority area of Resource Efficient Growth.** It contributes to the CPF objective 1.1. to promote more resource-efficient, inclusive, and diversified growth in the rural sector. Building the capacity of livestock farmers and other value chain actors to adopt good animal husbandry practices, better animal health management and awareness of zoonotic disease reduces disease incidence, productivity losses, mortality, as well as associated substantial economic costs accruing to rural populations. The program enhances the adoption of market standards for animal health management, as well as food quality and safety in animal product value chains. It also contributes to objective 1.5 to strengthen disaster resilience by improving the prevention of endemic and emerging infectious diseases with its focus on zoonoses.

17. **The proposed program integrates the CPF focus on the "how", that is, on strengthening the capacity of nodal institutions** for implementing a One Health approach at the national level, while also partnering with a select group of focus states to build planning and implementation capacity. Lastly, it supports Lighthouse India through joint knowledge generation and policy dialogue on One Health, which will bring global knowledge to India.

Rationale for Bank Engagement and Choice of Financing Instrument

18. **The World Bank brings significant knowledge and global experience on disease strengthening and surveillance programs with cross-sectoral design. T**he Bank supported various programs addressing similar development needs guided by the One Health principles. The Bank, along with technical partners, led the international support to respond the H5N1 avian influenza crisis. The post-Ebola Regional Disease Surveillance Systems Enhancement Project (REDISSE) in West and Central Africa adopted a One Health approach to strengthen diagnostic capacity in laboratories, surveillance in human and animal populations, and epidemic preparedness, and it was highly successful. The Bank has a significant engagement in the livestock sector, addressing animal health and zoonotic risks, including foodborne diseases and antimicrobial resistance (AMR) across regions. This global expertise is relevant and will inform the project design. India is a hotspot for emerging infectious diseases and zoonoses and supporting the Government of India (GoI) to leverage global knowledge and experience to strengthen capacity, reduce burden of infectious diseases, and address disease zoonotic risks will contribute substantially to improved global outcomes. The One Health agenda is a priority for the Bank given its critical role in global health security, prevention of future pandemics and contribute to global public goods. The Bank will help coordination between the AHSSOH program and the PM-ASBY: Transforming India's Public Health Systems for Pandemic Preparedness projects.

Choice of Financing Instrument

19. **A results-based instrument is most suited to supporting core institutional capacity and a "systems-based" approach** for improving coordination and collaboration between human, animal, and wildlife health management.

[2] c https://ijeab.com/upload_document/issue_files/38%20IJEAB-JAN-2017-23-Vulnerability%20of%20the%20Livestock%20Sector%20in%20Changing%20Climate%20Conditions.pdf

This provides a good entry point to influence and strengthen the emerging government priority on One Health, as well as to strengthen the institutional and programmatic framework on animal health and One Health.

20. **The Program for Results (PforR) is the best-suited instrument to respond to the current needs of improving animal health management and capacity in India**. The PforR instrument is designed to disburse against tangible results instead of inputs (Investment Project Financing, IPF) or a set of policy reforms (Development Policy Financing, DPF). Given the variability of current implementation of existing animal disease control programs and One Health capacity across the states, using an instrument that creates incentives for outcomes rather than inputs will help shift the focus of the current program towards outcomes. A PforR with an IPF component to support the technical assistance (TA) provision for capacity building of the Ministry of Fisheries, Animal Husbandry and Dairying (MOFAHD) and stakeholder state departments and institutions was considered. However, it was not chosen, because there is an existing capacity-building grant from the Bill & Melinda Gates Foundation (BMGF) to support the MOFAHD in this regard.

C. Program Development Objective(s) (PDO) and PDO Level Results Indicators

Program Development Objective(s)

21. The project development objective is to increase India's institutional capacity to effectively provide animal health services to livestock farmers in selected states using a One Health framework.

PDO Level Results Indicators

22. The following are the proposed PDO indicators.

    1. Number of farmers accessing improved animal health services (disaggregated by gender).
    2. Percentage of laboratories operating under improved quality assurance and quality control procedures (percentage).
    3. Number of value chain actors adopting good animal health practices to reduce veterinary public health risks (disaggregated by farmers, livestock markets/abattoirs, and gender).
    4. Reduction in human resource gap at the state-level Department of Animal Health and Dairying (DAHD) Departments (percentage).
    5. Number of joint actions covering animal, wildlife and human health implemented under a One Health framework

D. Program Description

PforR Program Boundary

Government Program

23. **The DAHD is implementing an overarching animal health management program, namely the Livestock Health and Disease Control Program (LHDCP).** Its objective is to control animal diseases and zoonoses. The program consists of: (i) an umbrella Livestock Health and Disease Control Scheme (LHDCS) with sub-components targeting upgradation of veterinary facilities, control of Classical Swine Fever (CSF) and *Peste des Petits Ruminants* (PPR); and the (ii) National Animal Disease Control Program (NADCP), with two sub-schemes on control of Food and Mouth Disease (FMD) and

Brucellosis, which were consolidated under the LHDCP in 2020.The key objectives of the LHDCP is to maintain a healthy, disease-free livestock population and prevent various zoonotic diseases. The key objectives of the NADCP are to control the FMD and Brucellosis by 2025 with vaccinations, and to eradicate them by 2030. The program and schemes are strategically highly relevant. Firstly, they contribute directly to national development objectives of doubling farmer incomes, as well as employment generation and entrepreneurship by improving animal health, and increasing livestock productivity and production. Secondly, controlling zoonoses and increasing the capacity of disease management directly contributes to reducing the threat of future pandemics. Thirdly, the programs contribute to the Sustainable Development Goals (SDG), namely, SDG 1: No Poverty and SDG 2: Net Zero Hunger. Finally, by improving animal health, the schemes increase animal productivity and contribute to reducing emissions from the livestock sector. This will contribute to the national goals to reduce greenhouse gas (GHG) emissions.

24. **The government has shown commitment to the LHDCP, and the program has achieved results.** Achievements include the vaccination of 381 million cattle against FMD and the declaration of FMD-free zones in three states; the introduction of an animal disease reporting system (NADRS); immunization against other economically important diseases (including Brucellosis and PPR), and the initiation of a control program for classical swine fever in the northeastern regions. However, these achievements are constrained by the factors noted earlier, and gaps exist. The Government allocated approximately US$462 million from 2017-18 to 2020-21 covering all 29 states and 8 union territories. Budgetary allocations to the schemes have been increasing, and about US$140 million was spent in fiscal year 2020-21. The overall budgetary allocation for the overall government program from 2021-26 is US$1.3 billion.

25. **Improved animal health outcomes require a shift from a schemes-based approach to a systems-based approach, as well as increased implementation capacity at the center and states.** Animal health management is considered a state subject in the Indian Constitution, with inter-state transmission of diseases a concurrent responsibility of both the states and the center. However, a significant proportion of the financial outlays for animal health management have come from central sector schemes that have largely focused on management and eradication of individual animal diseases. Schemes were implemented in silos at the state level, with limited resources being used uniformly across the state rather than emphasizing high-risk diseases and geographic hotspots. State context with regards to disease risk varies widely and a flexible approach will be needed to address state-specific needs.

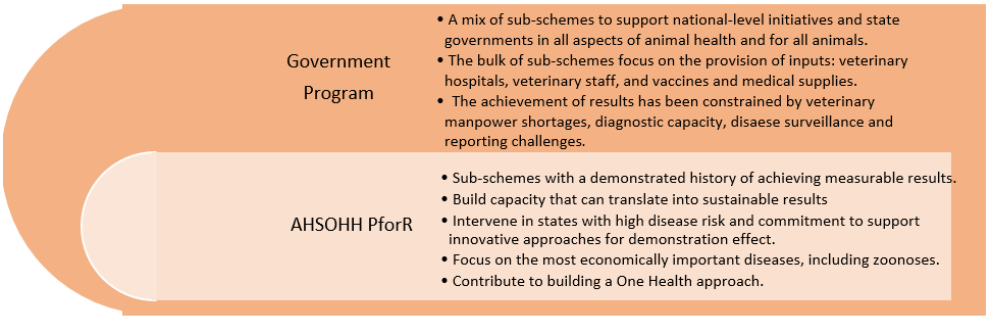
PforR Program Scope

26. **The proposed PforR aims to support the government in implementing selected elements of the LHDC, focusing on building system capacity for animal health management in an integrated, outcome-focused manner, as well as using the One Health approach.** In particular, the PforR will focus on strengthening the core capacity of animal health management, with a focus on five states to better prevent, detect and control animal disease outbreaks.

27. **Four guiding principles will be used to determine program boundaries, as well as to select elements of the government programs to be supported by the PforR.** First, the PforR will support ongoing elements of the government programs that have a demonstrated history of achieving measurable results. Secondly, the PforR will prioritize elements that address the important capacity constraints faced by state and national institutions, specifically where capacity building will translate into sustainable results. Thirdly, among other state selection criteria, the PforR will select states where there is a demonstrated commitment to support the innovative approaches being introduced by the project and moving toward a systems-based approach. Program implementation lessons in these focus states will inform program implementation by the DAHD in other states. Finally, program elements passing the first three

filters will be assessed for their ability to contribute to operationalizing the One Health approach through effective, measurable joint actions between animal, wildlife, and human health. Indicative program boundaries are shown in Table 1 on page 13. This will be refined during the project preparation phase.

Figure 1: AHSSOH PforR: Guiding Principles for Program Boundaries



28. **Based on the application of the guiding principles, the PforR will support the government in achieving its program objectives.** Five major results areas have been identified. Results Area 1 will support the strengthening of institutional capacity of selected government institutions and improve coordination needed to implement the One Health approach. Results Area 2 will support diagnostic capacity for animal diseases at the district, state, regional and national levels for the timely, quality diagnosis and response to disease outbreaks. Results Area 3 will support the delivery of and access to quality veterinary services, with a focus on high-risk areas. Results Area 4 will support effective animal disease surveillance by developing an integrated coherent disease surveillance and reporting system. Results area 5 will focus on increasing community awareness of animal disease management practices and farm-level adoption of biosafety and handling measures.

Results Area 1: Building Institutional Capacity for Implementation and Coordination of the One Health Approach

29. Results Area 1 aims to improve institutional capacity to implement an effective animal health management program, and to establish functioning coordination mechanisms on specific One Health actions for better surveillance, prevention, and response to zoonotic and emerging infectious diseases. RA1 will support improved capacity across the nodal national and state-level institutions responsible for livestock, wildlife, and human health at the national and state levels. Specifically, RA1 will provide support for joint planning, surveillance, and implementation of integrated disease management strategies with clear measurable goals. Emphasis will be placed on generating clear and quantifiable outcomes (for example, joint actions on rabies, brucellosis, TB, AMR, and data sharing) which contributes directly to the OH agenda. The support will include: (i) a diagnostic assessment and the development of state-level strategic plans (ii) training and capacity building of staff at stakeholder departments; (iii) the development of national standards and mapping and benchmarking of veterinary infrastructure, manpower and training facilities against such standards; and (iv) establishing joint research platforms with national and international institutions to undertake research concerning aspects of One Health.

Results Area 2: Enhancing Diagnostic Capacity for Effective and Timely Disease Diagnosis

30. Results Area 2 aims to enhance the diagnostic capacity for animal diseases at the district, state, regional and national levels for timely, quality diagnosis and effective response to disease outbreaks. The main areas of support include: (i) physical upgradation of diagnostic facilities at the district, state, regional and national levels, and the development and adoption of service standards for faster, more accurate disease screening; (ii) adoption of best

practice protocols and accreditation of laboratories with relevant national and international standards; (iii) developing and implementing a laboratory information system for effective information sharing; (iv) enhancing the availability of economical, kit-based diagnostics to enhance last-mile diagnostic service provision; and (v) training and capacity building of laboratory staff, field-level veterinarians, para-vets and forest department staff (including field epidemiology). Joint trainings (especially in field epidemiology) and improving diagnostic effectiveness are key OH elements.

Result Area 3: Increasing Access to Quality Veterinary Services

31. Result Areas 3 aims to increase the access of livestock farmers to quality veterinary services. The main areas of support include: (i) upgrading of veterinary hospitals and dispensaries to meet minimum national standards; (ii) scaling up the use of mobile veterinary units (MVUs) for last-mile service provision, with a particular focus on women farmers and rearers (iii) development of model veterinary hospitals and model livestock market in a cluster of districts; and (iv) capacity building of para-vets and community health workers through induction and refresher training to increase the strength of the workforce and to enhance the quality of services . RA3 will target training, equipping, and certifying women, who play a critical role in provision of last mile livestock services as community para-veterinary workers. It will assess gaps in existing service provision to women farmers and rearers and add service provision options, for example, flexible timings, home delivery of services and village-level support networks.

Result Area 4: Enhancing surveillance capacity for effective disease reporting and monitoring.

32. Result Areas 4 aims to enhance the surveillance of animal diseases by developing an integrated disease surveillance and reporting system for timely disease reporting and monitoring The main areas of support include: (i) developing integrated IT platforms and mobile applications for disease reporting that are aligned with and able to feed information into human disease reporting platforms; (ii) integrating wildlife disease surveillance in the NADRS and the onboarding of forest department staff into disease reporting platforms; (iii) capacity building of animal, human and wildlife personnel to strengthen disease monitoring in high-risk locations and protected areas; and (iv) establishing a robust IT platform to track key supplies (for example, vaccines) and provide accessible digital services to farmers. Integrating wildlife disease surveillance inro the NADRS directly contributes to OH given high origin of zoonoses from animal and wildlife sectors and improving surveillance contributes to early detection and prevention.

Result Area 5: Increasing Community Awareness of Animal Disease Management Practices and Zoonoses

33. Result Area 5 aims to increase community awareness about animal disease management practices by farmers and other value chain actors 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; (ii) building the capacity of livestock farmers to maintain good animal husbandry practices (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. Given the key role that women play in livestock rearing, RA5 will target women in awareness campaigns, training in GAHP and capacity building for zoonoses control. RA5 contributes to OH by reducing risks of zoonoses at community level.

E. Initial Environmental and Social Screening

34. **An Environmental and Social System Assessment (ESSA) will be conducted during the preparation phase to assess**: (i) the nature and scope of environmental and social (E&S) effects and risks associated with program interventions; and (ii) the adequacy of the existing legal and policy framework, institutional mechanisms, operational procedures

and practices, and departmental capacity to meet the core ESSA principles, as well as the identification of key gaps. Based on the ESSA findings concerning key gaps, appropriate measures will be integrated into the program design, as well as the Program Action Plan. Stakeholder consultations focused on ESSA will be conducted in collaborating with implementing agencies. The draft ESSA reports will be publicly disclosed and disseminated through consultations and websites before project appraisal.

35. **Climate Co-Benefits**: This project aims to establish animal management system through veterinary service delivery, disease surveillance and diagnostic capacity that would help address the climate shocks towards animal health. Through the one health approach adopted under RA-1, the project will enhance collaboration and establish animal health systems that are climate and disaster resilient. Project's RA-2 will provide support enhancement of diagnostic capacity for animal diseases such that the risk posed by projected increasing temperatures, rainfall and flooding are reduced. Under RA-3, the project will provide capacity building sessions linking the impacts of climate change on animal health to relevant stakeholders and will explore the deployment of solar-powered mobile veterinary units. RA-4 would encourage the use of digital platforms for animal disease reporting and would make disease surveillance more sensitive to climate change vulnerabilities; and RA-5 will help in building community awareness towards the impacts of climate change on animal health.