



**ASIAN INFRASTRUCTURE
INVESTMENT BANK**

September 8, 2023

Sovereign-Backed Financing

Project Document

**P000707 Cambodia: Cross-border Livestock Health and Value-Chain
Infrastructure Improvement Project**

Currency Equivalents

(As at date, Aug. 31, 2023)

Currency Unit – Cambodia (KHR)

KHR1.00 = USD0.00024

USD1.00 = KHR4,139.99

Borrower's Fiscal year

January 1 to December 31

Abbreviations

ADB	The Asian Development Bank	IPSAS	International Public Sector Accounting Standards
AIIB	The Asian Infrastructure Investment Bank	MAFF	The Ministry of Agriculture, Forestry and Fisheries
AMR	Antimicrobial Resistance	MEF	Ministry of Economy and Finance
COVID-19	Coronavirus Disease	NAHPRI	The National Animal Health and Production Research Institute
DCZs	Disease Control Zones	NVVC	The National Veterinary Vaccine Center
EIRR	Economic Internal Rate of Return	O&M	Operations and Management
EMDP	Ethnic Minority Development Plan	PIU	Project Implementation Unit
ES	Environmental and Social	PPIU	Provincial Project Implementation Units
ESP	Environmental and Social Policy	PPMS	Project Performance Monitoring System
FM	Financial Management	PSC	Project Steering Committee
GDAHP	General Directorate of Animal Health and Production	RF	Resettlement Framework
GHG	Greenhouse Gas	SPS	Safeguard Policy Statement
GMP	Good Manufacturing Practice	TAD	Transboundary Animal Disease
GMS	The Greater Mekong Subregion	TOR	Terms of Reference

GRM	Grievance Redress Mechanism	USD	US Dollar
ICT	Information Communication Technology	WA	Withdrawal Application
KHR	Cambodian Riels		

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1. Summary Sheet

Project No.	P000707
Project Name	Cross-border Livestock Health and Value-Chain Infrastructure Improvement Project
The Asian Infrastructure Investment Bank (AIIB) Member	Kingdom of Cambodia
Borrower	The Government of Cambodia
Project Implementation Entity	General Directorate of Animal Health and Production (GDAHP)
Sector	Health Infrastructure
Project Objective	The Project aims to strengthen animal and human health safety and promote cross-border livestock trading among countries in the Greater Mekong Subregion (GMS) including Cambodia, Lao PDR, Viet Nam, Thailand, and China.
Project Description	The Project will be jointly co-financed with the Asian Development Bank (ADB) to, based on the One Health approach, ¹ support: (i) construction of a vaccine center and establishment of disease control zones (DCZs) to strengthen prevention and monitoring systems of animal and zoonotic diseases; (ii) refurbishment of the national animal health research institute, provincial animal health laboratories and relevant facilities to upgrade diagnosis and control functions of the diseases; (iii) establishment of livestock value chain infrastructure with high standards of hygiene and sanitation; (iv) enhancement of policies and regulations for better health, safety, supply and trade in livestock and livestock products; and (v) operation and management of the Project.
Implementation Period	Start Date: Oct. 1, 2023 End Date: Dec. 31, 2029
Expected Loan Closing Date	June 2030
Cost and Financing Plan	Project cost: USD128.78 million <u>Financing Plan:</u> AIIB loan: USD33.00 million

¹ The One Health approach leverages the idea that problems impacting human health, terrestrial and aquatic animals, plants and the environment can be effectively resolved through improved coordination, communication and collaborative actions across disciplines and that these solutions be sustainable. The Government of Cambodia started to adopt the One Health approach and established inter-ministerial working groups on the relevant issues, such as avian flu, zoonotic diseases, antimicrobial resistance and food safety. The Government is now preparing a national One Health strategy, and the Project will support the implementation of the strategy.

	<p>AiIB grant from the Pandemic Prevention, Preparedness and Response Financial Intermediary Fund: USD10.00 million</p> <p>ADB loan and grant: USD62.90 million</p> <p>Government of Cambodia: USD22.88 million</p>
Size and Terms of AiIB Loan	<p>USD33.00 million</p> <p>Final Maturity: 21 years</p> <p>Average Maturity: 12-15 years</p> <p>Grace Period: 8 years</p> <p>AiIB's standard interest rate for sovereign-backed loans minus 53 basis point interest buy-down through the Special Fund Window for Less Developed Members.</p>
Environmental and Social (ES) Category	B
Risk (Low/Medium/High)	Medium
Conditions of Effectiveness	(i) ADB's loan with the client has been executed; (ii) co-lenders' agreement between AiIB and ADB has been executed; and (iii) legal opinion on the legal agreements has been received.
Key Covenants	GDAHP, in coordination with the Ministry of Economy and Finance (MEF), should ensure timely provision of counterpart funding.
Conditions for Disbursement	Payment of Upfront Fee
Retroactive Financing (Loan % and dates)	None
Policy Waivers Requested	None
Policy Assurance	June 1, 2023
Economic Capital (Ecap) Consumption	USD13.63 million Ecap Ratio: 43.9%

President	Jin Liqun
Vice President	Urjit Patel
Director General	Hun Kim
Team Leader	Masato Nakane, Senior Investment Operations Specialist
Team Members	<p>Jai Chordia, Investment Operations Specialist</p> <p>Sheikh Naveed Ahmed, Social Development Specialist</p> <p>Shodi Nazarov, Financial Management Specialist</p> <p>Winnie Weini Li, Environment Associate</p> <p>Ting Wang, Counsel</p> <p>Rizal Rivai, Procurement Consultant</p>

2. Project Description

A. Project Overview

1. **Project Objective.** The Project aims to strengthen animal and human health safety and promote cross-border livestock trading among countries in GMS including Cambodia, Lao PDR, Viet Nam, Thailand, and China.

2. **Project Description.** The Project will be jointly co-financed with ADB to, based on the One Health approach, support: (i) construction of a vaccine center and establishment of DCZs to strengthen prevention and monitoring systems of animal and zoonotic diseases; (ii) refurbishment of the national animal health research institute, provincial animal health laboratories and relevant facilities to upgrade diagnosis and control functions of the diseases; (iii) establishment of livestock value chain infrastructure with high standards of hygiene and sanitation; (iv) enhancement of policies and regulations for better health, safety, supply and trade in livestock and livestock products; and (v) operation and management of the Project.

3. The recent outbreak of coronavirus disease (COVID-19) pandemic, monkeypox and avian flu underscores the need for a One Health approach that broadens disease surveillance beyond the human to cover the zoonotic sphere. The integration of the knowledge and technical know-how found in veterinary practice in human health is essential to prepare for future health crises. However, the practical implementation of the One Health approach remains challenging and very limited, and the proposed Project is a significant step forward especially in the countries in the GMS with rapidly expanding livestock trade.

4. **Project Locations.** The Project will be implemented in six target provinces of Cambodia: Kampong Cham, Oddar Meanchey, Phnom Penh, Prey Veng, Siem Reap, and Takeo province. In addition, the Project will build several facilities in other provinces, including the National Veterinary Vaccine Center (NVVC) in Kandal Province. Kampong Cham, Phnom Penh, Prey Veng, Takeo and Kandal provinces are close to the border with Viet Nam, and Oddar Meanchey, Siem Reap and Pursat provinces are near Thailand.

5. **Expected Results.** The main outcomes of the Project will be improved livestock, human and environmental health, and productive value chain infrastructure. This will lead to increased cross-border trade in livestock and livestock products. The Project will also help concerned government agencies respond timely in preparation for emerging zoonotic disease outbreaks, and food safety incidents, including Antimicrobial Resistance (AMR) transgressions. The Project's objectives are quantified by the following indicators (Annex 1):

- (i) The number of samples per annum tested for transboundary animal diseases (TADs), zoonoses, foodborne pathogens and AMR at national animal health laboratories will increase to 100,000 by 2029 (Baseline: 2,000 in 2022)
- (ii) The number of live cattle and the volume of meat per year traded through formal regional channels to neighboring countries will increase to 10,000

cattle and 100 tons, respectively, by 2030 (Baseline: 2,000 cattle and 0 ton in 2022)

6. **Expected Beneficiaries.** The direct beneficiaries will be farmers, enterprises and government agencies, including female farmers, women-owned enterprises, female government officials and female village animal health workers, involved in the livestock value chain in the targeted provinces. The farmers, enterprises and concerned government agencies will be better equipped to protect livestock from zoonotic diseases, TADs and AMR, and other potential animal health crises. The Project will also benefit consumers by making healthier and safer livestock products available. Since the Project will minimize economic and public health damage caused by animal and zoonotic diseases and AMR and improve environmental health, the entire population will eventually gain benefits. The Project will also have positive impacts in the future on the society and economy of neighboring countries by preventing infectious diseases and promoting livestock and livestock product trade across borders.

B. Rationale

7. **Livestock health and health services.** The livestock sector in Cambodia is vulnerable to emerging infectious diseases and TADs. In 2019, nine zoonotic diseases were reported in Cambodia, including foot and mouth disease, African swine fever, and highly pathogenic avian influenza. The risk of TAD infection is a significant threat to livelihoods, food security, trade, and economic growth, while zoonoses, foodborne hazards and AMR also threaten human health. Livestock value chains in the GMS countries are fragmented, inefficient, and regularly cross borders illegally. Inefficiencies in current livestock systems are amplified by suboptimal infrastructure at key value chain nodes and constrained disease monitoring and control facilities and capacities. The lack of livestock breeding centers and feedlots, and certified slaughtering, cold storage, and processing facilities also contributes to the vulnerability of the value chains and insufficient food safety. Smallholders lack access to value chain services and high value markets due to the absence of certified livestock production and meat processing as well as formal trade pathways, while the unclear responsibilities of public and private sector roles in animal health delivery raise livestock production risks and costs.

8. Livestock health services are still underdeveloped in Cambodia. GDAHP was established in 2016 to oversee livestock health services and the budget for these services has been steadily increasing, particularly since the formation of GDAHP. Notwithstanding this improved financial support from the central government, the funds available to the livestock health services remain inadequate to provide basic disease surveillance, to support effective disease prevention and control, and even for repairs and maintenance of the existing facilities. International development partners continue to be a key resource supporting the delivery of livestock health services in Cambodia. The management of resources and operations is also weak by the lack of coordination among the relevant public agencies.

9. On the other hand, the livestock subsector in Cambodia has considerable potential for growth with increasing domestic meat consumption, driven by economic growth, urbanization and population expansion; and expanding opportunity for commercial pig and poultry farming linked to integrated animal feed and abattoir agribusinesses. The continued growth, however, depends on the capacity of Cambodia

to improve the efficiency and competitiveness of its livestock sector including progress in disease control and animal nutrition.

10. The Project's investment in the TAD and zoonotic disease control infrastructure, capacity building, and regulations for disease monitoring and treatment, can support the recovery from COVID-19 and reduce the risk of future emerging infectious diseases. At the same time, the Project will increase productivity, inclusiveness, sustainability, and resilience in Cambodian livestock value chains, while DCZs can leverage private investment in value chain facilities, such as feedlots, slaughtering, processing, packaging and cold chains. Such efforts can produce measurable pro-poor outcomes while protecting consumers, smallholders, industries and the environment, and contributing to the objectives of "One Health Approach", linking the health of people to the health of animals and the environment. The sector assessment is in Annex 2.

11. **Strategic Fit for AIIB.** The proposed Project is highly aligned with AIIB's thematic priorities on connectivity and regional cooperation, green infrastructure, and technology-enabled infrastructure. First, GMS member countries formulated the Strategy for Promoting Safe and Environmental-Friendly Agro-Based Value Chains in GMS in 2017, based on which the countries in the region decided to join hands in improving animal health security and promoting cross-border trade of livestock and related products. A parallel project has been prepared for Lao PDR, and once the relevant projects are implemented in the neighboring countries, the Project is expected to have a larger impact on zoonotic disease control of the region in synergy with other projects by establishing a broader cooperation network for collective actions. Secondly, the Project will expand and upgrade livestock health and production infrastructure in a climate-friendly manner compared with a business-as-usual scenario and will include climate change adaptation and mitigation measures. Thirdly, the latest technologies and international best practices will be introduced for the livestock value-chain infrastructure such as NVVC. The Project will also establish a digital livestock platform including a mobile application for livestock identification and traceability system, laboratory information management system, and animal production and health information system.

12. **Paris alignment and Climate finance.** The Project is considered aligned with both mitigation and adaptation objectives in the Paris Agreement. The Project activity "climate smart agriculture (climate smart livestock production)" is included in the "Joint MDB Universally Aligned List" with activities that have a negligible net impact on the climate, aligning with BB1 of Joint MDB methodological framework for Paris Alignment. Regarding Paris alignment on adaptation, BB2, the Project has completed an assessment of climate risk on project activities, based on which specific climate adaptation measures were introduced. Such adaptation activities include: (i) deploying livestock breeds with tolerance to climate stresses; (ii) disseminating drought-and flood-tolerant forage species and feed management practices; (iii) improving resilience in terms of siting, construction, and upgrades of infrastructure; and (iv) integrating innovative, cost-effective adaptation technologies and practices. In addition, the Project can reduce greenhouse gas (GHG) emissions by 11.1 tons of carbon dioxide equivalent per ton of meat produced by adopting better breed and feed management and energy saving facilities along the livestock value chain. AIIB's financing estimates indicate contributions of USD7.03 million for mitigation and USD6.72 million for adaptation.

13. The Project is also aligned with two AIIB's corporate strategies: digital infrastructure sector strategy and a draft strategy for other productive sectors. The Project will facilitate introduction of digitalized facilities such as digital diagnostic devices, digital tracking facilities, and digital recording systems. The Project will also invest into livestock production infrastructure with high standards of hygiene and sanitation to improve animal, human and environmental health.

14. **Alignment with Country's Strategies.** The Project is consistent with the short- and mid-term country's strategies. The Government launched all-out efforts to bounce back from the damage caused by COVID-19 pandemic, paying special attention to public health improvement, generating job opportunities, private sector revitalization, and women empowerment. The Project will align with those COVID-19 recovery efforts, while making additional efforts for the reduction of zoonotic disease and AMR risk to the society, employment generation in the target provinces through infrastructure development and private sector development in livestock operations. The Project will also support women's empowerment through the engagement of more female workers in livestock production by creating conducive work environments for women. The Project is fully aligned with the mid-term national development strategy of the government, "Rectangular Strategy for Growth, Employment, Equity and Efficiency-Phase IV" and its agriculture sector strategy, "Five-Year Strategic Plan 2019-2023 for Agriculture Sector." In the Rectangular Strategy, the Government accords high priority to economic diversification, private sector development, inclusive and sustainable development and human resource development. In the Five-Year Strategic Plan, the Government emphasizes the importance of livestock sector modernization.

15. **Value Addition by AIIB.** Through co-financing with ADB, which is a lead agency for regional cooperation in GMS, AIIB can enhance cooperation with the neighboring countries in contributing to cross-border trade and harmonization of animal disease control. Cooperation with the neighboring countries is the key to successful implementation of the Project. To control and contain animal and zoonotic diseases, neighboring countries need to share information, knowledge, skill, and experience as well as establish effective communication channels, build trust, and harmonize relevant regulations. AIIB has a role to play as an honest broker to facilitate collaboration among the neighboring countries for knowledge sharing and capacity building. Specifically, AIIB will help the Government standardize regulations, exchange information and prepare the shared operation of checkpoints for border clearance to reduce the time and cost of cross-border trade. New technologies will also be introduced to livestock health and production infrastructure financed by AIIB, such as NVVC and digital livestock information platform. AIIB successfully mobilized a USD10.00 million grant from the Pandemic Prevention, Preparedness and Response Financial Intermediary Fund to strengthen prevention, preparedness and response to future pandemics. Under the Project, AIIB will promote private economic activities in the livestock value chain by attracting private sector investment in relevant facilities such as model slaughterhouses, private animal health services, and a private veterinary association.

16. **Value Addition to AIIB.** The Project will be one of AIIB's earliest regular projects to support recovery from COVID-19, and will take the One Health approach, which involves an integrated solution to health improvement linking animal health, human health, and environmental health. This approach aims to effectively resolve problems

impacting human health, terrestrial and aquatic animals, plants and the environment through improved coordination, communication and collaborative actions across disciplines and borders. Demand for the One Health approach is expected to grow rapidly with rising awareness of the potential impacts of animal and zoonotic diseases, and AIIB may be requested to process similar types of projects in the future based on the experience of the proposed Project. Processing of the Project also requires close coordination with other development partners, which are playing an important role in livestock health of the country such as International Fund for Agricultural Development and the Food and Agricultural Organization. AIIB has rarely worked with some of those partners, and we can establish a new working relationship with those agencies.

17. **Lessons Learnt.** There are several key lessons learned from other development partner's operations of similar projects. Those lessons include: (i) the need for better information communication technology (ICT) and digital databases to improve farmers' access to livestock and disease management knowledge; (ii) the importance of farmer-to-farmer extension and spontaneously adoptable technologies to increase livestock health; (iii) the need to clarify public and private sector roles in animal health service delivery; (iv) the importance of formal statutes and extensive mentoring for sustainable farmer group development; (v) the importance of sustainability for project built infrastructure; and (vi) the necessity of sustained donor support to transition from low input livestock systems to commercially oriented production.

18. Based on the lessons, the Project is designed to cover (i) deploying digital technologies to enhance farmers' access to knowledge on livestock health and value chain operations; (ii) building capacities on climate smart livestock production and farmer-to-farmer extension; (iii) defining public and private sector roles and responsibilities in delivery of animal health services; (iv) incorporating sustainability mechanisms for infrastructure, including gradual shift of operating costs to project beneficiaries; and (v) creating an enabling environment for public-private partnerships and mobilizing private sector investment into the livestock subsector.

C. Project Components

19. The Project is jointly financed with ADB, and AIIB will mainly invest in hard infrastructure in the following focus areas: (i) establishment of the NVVC and DCZs, (ii) refurbishment of the National Animal Health and Production Research Institute (NAHPRI), provincial animal health laboratories and relevant facilities, and (iii) upgrade of livestock value chain infrastructure with high standards of hygiene and sanitation. The Project will also cover the expenses on project management. In addition, ADB will exclusively finance technical support with their grant for the Government to enhance policies and regulations for better health, safety, supply and trade in livestock and livestock products.

20. **Component 1.** This component of the Project will strengthen prevention and monitoring system of animal and zoonotic diseases and consist of (i) the construction of the NVVC with capacity to produce a limited range of vaccines for large ruminants and poultry; and (ii) establishment of the DCZs and monitoring infrastructure, and where required, associated quarantine facilities. The NVVC will be constructed on an elevated 15 ha government-owned site in Kandal province, with bio-secure virology and

bacteriology vaccine production units and a quality control laboratory, together with office space, staff housing, test animal housing, a water well and elevated storage tank, organic wastewater, and toxic waste treatment facilities, roading and landscaping. The Project will support the establishment of two DCZs in a phased manner to assist in the transitioning of Cambodia from the World Organization for Animal Health Foot and Mouth Disease Progressive Control Pathway stage I to at least stage II. In addition, the national cattle breeding center will be built on the government land in Kampong Thom province financed by ADB.

21. **Component 2.** The second component will upgrade diagnosis and control functions of the diseases by refurbishing livestock health improvement infrastructure, including diagnostic and analytical laboratories. The Project will upgrade infrastructure in the NAHPRI to expand the laboratory space and enable the implementation of ISO 17025 and biosecurity level 2 standards and certification. In addition, the associated animal health laboratories and the relevant facilities in target provinces will be constructed or upgraded to ISO 9001 and good laboratory practice standards. The laboratories will be provided with ISO-compliant equipment for the detection and monitoring of livestock diseases, zoonoses, AMR and for animal feed, meat and veterinary medical product testing for quality and safety.

22. **Component 3.** This will establish livestock value chain infrastructure, including publicly owned live animal and traditional meat markets, abattoirs, meat stores and processing facilities to improve hygiene and sanitation standards and reduce impact on environmental health. The Project will construct model public slaughterhouses in Phnom Penh and Siem Reap to be leased out to the private operators through bidding for slaughterhouse management and financial sustainability. The abattoirs will be built with cooling and waste management facilities and a facility for conducting rapid tests and will meet the requirements of certification for good manufacturing practice (GMP) and hazard analysis and critical control point. The Project will also upgrade up to four existing public abattoirs in other target provinces to GMP standards.

23. **Component 4.** This component will enhance legal and regulatory framework for better health, safety, supply and trade in livestock and livestock products and include (i) national livestock policy support; (ii) cross-border livestock trade policies; (iii) regulations and standards; and (iv) private livestock subsector development. The relevant activities will be exclusively covered by ADB.

24. **Component 5.** This component will include the cost related to the operations and maintenance (O&M) of Project Implementation Unit (PIU) office.

25. **Financing.** AIIB will provide a USD33.00 million sovereign-backed loan and plans to mobilize USD2.50 million from the Special Fund Window for Less Developed Members to buy down the interest rate by 53.0 basis points. The Project is eligible for the Special Fund Window support considering that Cambodia is categorized as an International Development Association-only country by the World Bank and that the Project is a sovereign-backed financing fully aligned with AIIB's thematic priorities. The Government and AIIB will also utilize a grant of USD10.00 million to be received from the Pandemic Prevention, Preparedness and Response Financial Intermediary Fund to finance the Project blended with AIIB's loan.

Table 1: Project Cost and Financing Plan

Item	Project Cost (USD m)	Financing (USD m and %)							
		AIB				ADB		Gov	
		Loan	Grant	Total	Share	Total	Share	Total	Share
Component 1	55.45	6.24	7.00	13.24	23.9%	30.36	54.8%	11.85	21.4%
Component 2	30.73	0.39	3.00	3.39	11.0%	17.74	57.7%	9.61	31.3%
Component 3	27.71	18.42	0.00	18.42	66.5%	8.84	31.9%	0.45	1.6%
Component 4	2.01	0.00	0.00	0.00	0.0%	1.68	83.6%	0.33	16.4%
Component 5	7.74	4.77	0.00	4.77	56.3%	2.33	34.7%	0.64	9.0%
Contingencies	5.13	3.18	0.00	3.18	62.0%	1.95	38.0%	0.00	0.0%
Grand Total	128.78	33.00	10.00	43.00	33.4%	62.90	48.8%	22.88	17.8%

Note: Due to the rounding, the total values are not necessarily the same as sum of each component.

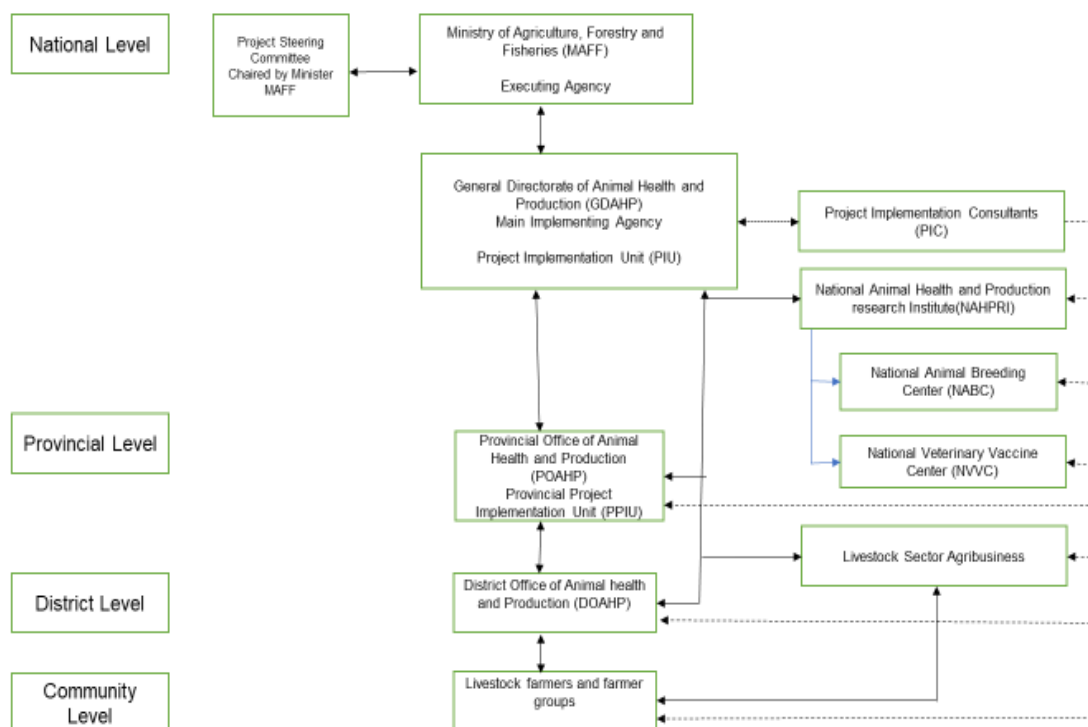
D. Implementation Arrangements

26. **Implementation Period.** The implementation will start from October 2023, and the Project will be closed in December 2029.

27. **Oversight.** The Ministry of Agriculture, Forestry and Fisheries (MAFF) is the executing entity. A Project Steering Committee (PSC) chaired by the Minister of MAFF or the Minister's designated representative will provide the oversight. Members (director and above) will include: (i) MAFF GDAH; (ii) MAFF Department of Accounting and Finance; (iii) MAFF Department of Forestry and Wildlife; (iv) MAFF department of Planning and International Cooperation; (v) MEF; (vi) Ministry of Health (One Health); (vii) Ministry of Environment (One Health and environmental safeguards related matters); (viii) Ministry of Industry, Science, Technology and Innovation (livestock agribusiness); (ix) Ministry of Women Affairs; and (x) Head, PIU (secretary).

28. **Implementation Management.** GDAH within the MAFF will be the implementing entity and will be responsible for implementation and resolving management/implementation issues as they arise. A PIU will be established within the GDAH to oversee the day-to-day operations. It will also support the PSC for inter-ministerial coordination related to the Project and serve as secretariat to the PSC. The PIU will comprise a project director, deputy project director, engineer, gender officer, environment officer, social safeguards officer, training officer, communications officer, financial officer, procurement officer, and monitoring and evaluation officer. Participating provinces will each establish Provincial Project Implementation Units (PPIUs) within their respective Provincial Office of Animal Health and Production that will support the implementation of provincial level activities. The PPIUs will be led by a senior livestock or veterinary office as Project Manager who will serve as the focal contact with the PIU. Project implementation consultants will be hired to support PIU and PPIUs and ensure smooth implementation.

Figure 1: Project Organization Structure



Source: Asian Development Bank

29. **Implementation Monitoring.** A project performance monitoring system (PPMS) will be developed and implemented by the PIU with the assistance of the project implementation consultancy. PPMS will be approved by the PIU and endorsed by the PSC with no-objection by AIIB and ADB. Data will be collected at the village level to identify the current socio-economic conditions of target beneficiaries and to assess the impact of the investments. PPMS will be based on inputs, outputs, and outcomes to be measured from the baseline survey and throughout project implementation. The project implementation consultancy’s national PPMS expert will be responsible for the baseline survey, and for subsequent surveys.

30. **Procurement.** The ADB’s Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time) shall apply to this Project, subject to universal procurement.² ADB will provide Procurement Services for the Project.

31. Procurement related activities, involving bid evaluation, preparation of the bid evaluation report, and contract award, are generally carried out by the MAFF/GDAHP and PIU. Due to their limited capacity, MAFF/GDAHP and PIU will be supported by the project implementation consultants in developing the detailed engineering design, technical specifications, construction drawings and bidding documents. There is no e-procurement yet in place so all procurement will be done manually. MEF provides advice

² ADB. 2013. Blanket Waiver of Member Country Procurement Eligibility Restrictions in Cases of Cofinancing for Operations Financed from Asian Development Fund Resources. Manila

to GDAHP and carries the mandate to review the amendments to legal/regulatory framework and monitors public procurement.

32. A Standard Operating Procedure for Externally Financed Project/Program in Cambodia was developed in 2012 and subsequently revised in 2019, which streamlines the procedures for procurement and clarifies where there are any overlaps. The manual was first developed in consultation with the primary donor partners and provides a guide for the government in terms of procurement for externally financed projects. This Standard Operating Procedure will be used for those procedures which are not governed differently in the loan documents.

33. ADB standard procurement documents will be used for the Project. For the procurement under open competitive bidding with national advertisement procedures, the harmonized national bidding documents (national competitive bidding and shopping or request for quotation), acceptable to AIIB and ADB, will be used.

34. **Financial Management (FM).** PIU will be responsible for the overall project FM and disbursement work, and PPIUs will be used to channel some funds to contractors and suppliers. The cash basis accounting system will be followed for project accounting. PIU will maintain project accounts and have custody of supporting documents. The project's financial progress will be reported quarterly through project progress reports to be submitted within 45 days from the end of each quarter. The audited project financial statements for each year of project implementation will be submitted within six months from the fiscal year-end.

35. **AIIB's Implementation Support.** Considering the broad geographical coverage of the Project and the capacity of provincial and district government, AIIB will conduct at least one field visit per year depending on the necessity, especially during the initial stage. In addition to the field visits, AIIB will also well coordinate with the co-financier, ADB, and other relevant development partners such as Food and Agricultural Organization, and monitor the performance of the local and international consultants engaged by the PIU to conduct frequent supervision of the procurement, construction and capacity building activities on the ground. AIIB will support to establish Provincial Offices of Animal Health and Production, which will assist the implementation of provincial level activities, and recruit project implementation consultants to provide necessary support for day-to-day operations and capacity building to PPIUs. AIIB will carry out a midterm review between 24 and 30 months following the implementation start date.

3. Project Assessment

A. Technical

36. **Project Design.** The Project is appropriate within the country context in terms of the Implementing Entity's capacity, available skills, ability to acquire land, and domestic legal constraints. The Implementing Entity of the Project, GDAH, was established in 2016, which comprises three technical departments (Animal Production, Animal Health and Veterinary Public Health, and Technical Extension and Legislation), an administrative and financial department, and the NAHPRI. GDAH is responsible for providing livestock health and veterinary public health services, and it has relevant capacity and skills to achieve the objective of the Project. GDAH is allocating the land for the newly established facilities including NVVC. The investment in infrastructure can be carried out under the existing legal framework, and the Project will provide the following technical support to leverage the impact of this Project: (i) national livestock policy support; (ii) cross-border livestock trade policies; (iii) regulations and standards; and (iv) private livestock sector development.

37. The project design also considered the impacts of COVID-19. The Project took into consideration the demand for inputs to substitute imports, including vaccine and artificial insemination inputs, and investments needed to harness opportunities for regional livestock and livestock product trade, including increased disease surveillance and control and upgraded livestock infrastructure.

38. **Operational sustainability.** The Project will ensure the operational sustainability of the relevant institutions by building capacity and formulating business models. The Project will establish new institutions including NVVC, and upgrade existing facilities such as the NAHPRI and several wet markets. The Project will provide technical assistance to the staff appointed to those facilities and make sure that the staff will obtain the necessary skills to operate the facilities. It will take some time for the newly established institutions to generate sufficient revenues to finance operation and maintenance costs, but the Project will prepare the business models so that those institutions will be able to earn enough to cover the operational cost after the Project is closed. The Project will also ensure that the staff at upgraded facilities will be well trained and the facilities will earn income to finance their operations such as by proposing the appropriate fees they can impose on their users.

B. Economic and Financial Analysis

39. Considering the expected benefits and beneficiaries, first, economic analysis focuses on analyzing the following sources of impacts dealing with main livestock species including cattle, buffalo, pigs, and poultry:

- (i) **Disease effects:** mortality and loss of production caused by clinical or subclinical disease;
- (ii) **Market disruption:** as a result of consumer fears, or supply shortage causing market shocks, or as a consequence of restrictions on international trade in livestock and livestock products that are applied because of animal diseases;

- (iii) **Control measures:** costs and benefits of measures applied by farmers, governments and industry to prevent or control disease outbreaks; and
- (iv) **Effects beyond the livestock sector:** impacts on human health, the public health system, tourism and wildlife.

The Project will lead to a reduction in the impacts described in the categories above, and the value of the avoided losses and costs are defined as benefits derived from the Project. The incremental benefit is obtained from the difference between the without project and with project benefit scenarios. A Monte Carlo simulation is conducted to investigate the distribution of economic internal rate of return (EIRR) to check the impacts of animal diseases, specifically TADs. In addition, the regional benefits of improved health measures for smallholder cattle, nutrition, animal husbandry, and pig and poultry breeding and fattening systems are analyzed. Cambodia will continue to be a net meat importer for a while, and the import substitution will take place initially. However, the live cattle export to China and beef export to Viet Nam are expected to increase at the same time.

40. EIRR for the overall project, including regional benefits, is 10.5 percent. The incremental benefit to Thailand and Viet Nam amounts to USD134 million in present value terms, due to reduced mortality and trading losses of livestock. If the impacts on the neighboring provinces, which are not the target of the Project, are included, the incremental benefit increases to USD332 million, and EIRR becomes 11.2 percent.

41. **Financial Analysis.** The financial analysis is conducted to show that priority facilities including DCZs, NVVC, NAHPRI and livestock value chain infrastructure will generate sufficient incremental net income to contribute to routine O&M (Table 3). Initially the costs will be financed by the loans from AIIB and ADB and budget from the government, and after 2027, the O&M costs will be covered by the revenues of the facilities. The revenues will mainly come from the charges on beneficiaries such as inspection fees of the inspection station, vaccine fees produced by NVVC, test charges of NAHPRI, and rents of retail stalls in the bird market. Periodic maintenance typically requires more resources, specialized equipment, and skills beyond the ability of stakeholders.

Table 3: Financial Cashflow (KHR million)

	2023	2024	2025	2026	2027	2028	2029	~	2042
Inspection Station of Disease Control Zone									
O&M Costs	-	153	871	1,432	1,432	1,432	1,432	~	1,432
Total Costs	14,481	153	871	1,432	1,432	1,432	1,432	~	1,432
Revenue	1,536	3,072	3,072	3,072	3,072	3,072	3,072	~	3,072
Net Revenue	-12,945	2,919	2,201	1,640	1,640	1,640	1,640	~	1,640
National Veterinary Vaccine Center									
O&M Costs	-	39	1,526	1,652	1,652	1,652	1,652	~	1,855
Total Costs	8,809	31,366	2,734	2,450	2,450	2,450	2,450	~	1,855
Revenue	-	-	311	2,802	2,802	2,802	2,802	~	7,160
Net Revenue	-8,809	-31,366	-2,423	352	352	352	352	~	5,305
National Animal Health and Production Research Institute									
O&M Costs	-	12	568	568	568	568	568	~	568
Total Costs	13,818	12	568	568	568	568	568	~	568

Revenue	-	1,038	1,869	1,869	1,869	1,869	1,869	~	1,869
Net Revenue	-13,818	1,026	1,301	1,301	1,301	1,301	1,301	~	1,301
Livestock Bird Market in Doun Keo									
O&M Costs	25	50	50	50	50	50	50	~	50
Total Costs	1,411	50	50	50	50	50	50	~	50
Revenue	91	183	183	183	183	183	183	~	183
Net Revenue	-1,320	133	133	133	133	133	133	~	133

Source: Asian Development Bank

42. **Economic Analyses.** We also conducted economic analysis on the main facilities. While GDP growth is projected to be slower than the pre-pandemic period, macroeconomic and fiscal conditions are expected to remain stable (Annex 3). The EIRR of each facility exceeded the nine percent threshold and the sensitivity analysis indicated that in general the project is robust to the different scenarios examined (Table 4).

Table 4: Economic Internal Rate of Return by Different Scenarios

Facility	EIRR (%)			
	Base case	+10% investment costs	+10% O&M costs	-5% charges
Inspection Station of Disease Control Zone	10.5	8.7	9.2	9.0
National Veterinary Vaccine Center	10.3	8.8	9.8	9.2
National Animal Health and Production Research Institute	13.4	11.9	13.4	12.6
Livestock Bird Market in Doun Keo	9.1	7.1	8.6	8.0

EIRR = economic internal rate of return, NAHPRI = National Animal Health and Production Research Institute, NVVC = National Veterinary Vaccine Center

Source: Asian Development Bank

C. Fiduciary and Governance

43. **Procurement.** AIIB will finance all components except for the construction of national cattle breeding center and Component 4.³ Accordingly, ADB's Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time) shall apply to this Project.

44. Bidding documents for co-financed packages will reflect that ADB and AIIB are jointly financing the Project; and that both ADB and AIIB may inspect and audit the procurement process undertaken and subsequent contracts entered by the borrower. Advance procurement and contracting (when applicable) will be jointly supervised by ADB and AIIB.

³ ADB. 2013. Blanket Waiver of Member Country Procurement Eligibility Restrictions in Cases of Cofinancing for Operations Financed from Asian Development Fund Resources. Manila.

45. There is no significant procurement risk associated with this Project, as the procurement risk rating is medium. The initial procurement plan for the entire project implementation is available and will be updated from time to time. The procurement will consist of a total of 26 procurement packages, which will be procured within 18 months after loan effectiveness. Below is the composition of the procurement:

- Goods: 14 packages are goods,
- Civil Works: eight packages,
- Consulting services are composed of four packages, and one which will be procured through direct contracting.

46. It is anticipated that a procurement prior review will be applied to the first three construction contract packages, the first contract package for goods under open competitive bidding, and the first contract package under the request for quotation. All consulting services contracts are subject to prior review. This prior review requirement may be assessed and amended from time to time during project implementation and will be reflected in the updated procurement plan.

47. Advanced procurement and contracting are expected for the following package: recruitment of the project implementation consultants and the design and supervision consultants. The terms of references (TORs) are already available. The selection process will follow the ADB Procurement Policy and Regulations. As applicable for advance procurement and contracting, the Bank Policy requires that the recipient undertakes such advance contracting at its own risk, and the ADB's no-objection to the procedures, documents or the proposal for award do not commit AIIB to make financing available for the Project.

48. **Financial Management.** PIU, under GDAHP, will be responsible for the overall project FM. The FM risk is considered medium, and the following mitigation measures were proposed: (i) GDAHP, in coordination with MEF, should ensure that the full amount of counterpart funding according to the project agreements will be provided on time; (ii) GDAHP should ensure that PIU and PPIUs are fully staffed with qualified and experienced finance personnel before loan effectiveness; (iii) GDAHP should recruit a national consultant to conduct capacity-building activities for MAFF internal audit staff as per approved TOR before the end of the first year of project implementation; (iv) GDAHP should procure an appropriate off-the-shelf accounting package for project and adopt it before the loan disbursement; and (v) Project finance staff should undertake self-study online on ADB disbursements and International Public Sector Accounting Standards (IPSAS) cash basis using ADB eLearning resources. The above-mentioned actions were included in the FM Action Plan of ADB's project administration manual. ADB will follow the progress of the implementation of proposed actions throughout the preparation and implementation of the Project and regularly update AIIB.

49. The preparation of an annual work plan and budget will begin in September of each project year. The budget is broken down by quarter to provide the quarterly projected cash requirements based on the timing of activities in the annual work plan.

50. PIU will need to recruit or second finance staff for the Project. GDAHP should ensure that PIU and PPIUs are fully staffed with qualified and experienced finance

personnel prior to loan effectiveness. In addition, the recruited staff should undertake self-study on ADB disbursements and IPSAS cash basis online using ADB eLearning resources. The project finance staff has been identified and will be seconded to PIU once the government and ADB and AIIB approve the Project.

51. GDAHP is a part of the governmental Financial Management Information System which is used for budget execution, transaction processing, and expenditure control under a centralized receipt and payment system. However, this financial management information system cannot track project funds once they are transferred to the commercial banks where sub-accounts will be located. Therefore, GDAHP should procure an appropriate off-the-shelf accounting package for project and adopt it before the loan disbursement.

52. The Government has developed a FM manual for externally financed projects which is up to date and used by all projects. It will be used for the proposed Project as well. PIU should follow it, considering the specifics of project FM arrangements. GDAHP will maintain or cause to be maintained separate books and records by funding source for all expenditures incurred on the Project following the Cambodia National Accounting Standards. GDAHP will prepare project financial statements on a cash basis following IPSAS.

53. Currently, the existing PIUs for other ADB financed projects prepare quarterly progress reports to ADB with supplementary financial and disbursement reports. The similar arrangements will be followed under the proposed Project. PIU will submit to ADB its financial reports within 45 days after completion of each quarter, in both electronic and hard copy format. The proposed report and its format are acceptable to AIIB, and such quarterly reports will be shared with AIIB by ADB.

54. MAFF has an office of the General Department of Internal Audit whose staff have received training under the ADB Public FM Reform Program. However, internal audit staff at MAFF need further capacity building since they are relatively new and inexperienced. Therefore, capacity building of internal audit staff at MAFF through a national consultant is required. GDAHP should recruit such consultants as per approved TOR before the end of the first year of project implementation.

55. The detailed consolidated project financial statements are to be audited in accordance with international standards on auditing by an independent auditor acceptable to ADB and AIIB every year. The audited project financial statements and the auditor's opinion will be presented in English to ADB and AIIB within six months from the end of the fiscal year.

56. **Disbursements.** Considering the joint co-financing approach, all project disbursements would be handled by ADB according to its disbursement procedures. Disbursements will follow the transaction-based method, including the following procedures: Advance procedure (through advances to the designated account) and direct payment procedure. Direct payments will be used for civil works, goods and consulting services, and the Advance procedure for expenditure relating to functioning of the PIU, operating costs of PIU staff and payments for the external auditors. For AIIB funds, the borrower should submit one original of the withdrawal application (WA) and

copies of supporting documents to ADB, and concurrently one identical copy of such WA and copies of supporting documents to AIIB. ADB will review each WA and advise AIIB to make the necessary payment, if any. AIIB shall process the disbursement after receipt of the advice from ADB. If disbursement is not made by AIIB, it will promptly inform ADB and the Borrower in writing of its decision and the basis of such decision.

57. Separate advance accounts, one for each funding source, will be established at MEF which will receive advances from ADB and AIIB. PIU will establish and administer separate sub-accounts at a commercial bank acceptable to ADB and AIIB. The currency of the advance and sub-accounts will be the United States dollars. PPIUs will also establish subaccounts at commercial banks to make smaller payments to suppliers at the provincial level. Separate sub-accounts should be established for each funding source.

58. All disbursements under government financing will be carried out in accordance with the regulations of the Government of Cambodia. To ensure access to counterpart funding due to competing projects, a covenant to the loan agreement about the provision of the full amount of counterpart funding according to the project agreements will be included.

59. **Governance and Anti-corruption.** AIIB is committed to preventing fraud and corruption in the projects it finances and may exercise its remedies under the loan agreement if any prohibited practices, as defined under the Bank's Policy on Prohibited Practices (2016), are found to have occurred in the use of loan proceeds. To the extent that the Prohibited Practices covered under ADB's Anti-Corruption Guidelines are similar to those under AIIB's Policy on Prohibited Practice, ADB's Anti-Corruption Guidelines will apply to the Project activities financed under the loan. AIIB reserves the right to investigate, directly or indirectly any alleged Prohibited Practices relating to the Project and to require the borrower to take necessary measures to address issues in a timely manner, and as appropriate.

D. Environmental and Social

60. **Environmental and Social Policy (including Standards) and Categorization.** The Project's ES risks and impacts will be assessed in accordance with ADB's Safeguard Policy Statement (SPS) as ADB is a lead co-financier. To ensure a harmonized approach to addressing the ES risks and impacts of the Project, and as permitted under AIIB's Environmental and Social Policy (ESP), ADB's SPS will apply to the Project in lieu of AIIB's ESP. AIIB has reviewed ADB's SPS and is satisfied that: (i) it is consistent with AIIB's Articles of Agreement and materially consistent with the provisions of AIIB's ESP, including the Environmental and Social Exclusion List and the relevant Environmental and Social Standards; and (ii) the monitoring procedures will be put in place for the Project. ADB has categorized the ES risks of the project as Category B for Environment, B for Involuntary Resettlement and B for Indigenous Peoples, as it is likely to have ES impacts that are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. This is equivalent to Category B if AIIB's ESP were applicable.

61. **Environment Aspects.** Overall, moderate negative environmental impacts are expected. The main and more complex adverse impacts of the Project will come from operation phase versus construction phase. Activities during construction stage may generate solid waste, wastewater, noise, air emission and soil erosion, and disturbance to nearby residents and potentially pollute water bodies, disturbing local ecology, and local physical cultural resources. For livestock facilities and projects, adverse environmental impacts and complex health and safety risks come from their operation phase. The main project activities with such impacts are laboratory operations, vaccine production, slaughtering, and animal inspection.

62. The main potential risks include (i) wastewater and the adequate treatment and slurry discharge/use; (ii) solid and hazardous wastes, their management and disposal; (iii) odor and air emissions; and (iv) Health & Safety including biosafety risks. These impacts have been assessed and corresponding mitigation plans include operation and maintenance of properly designed waste treatment facilities, monitoring of wastewater discharges, and implementation of generally accepted procedures for handling and disposal of solid and hazardous wastes. These were incorporated in the Environmental Management and Monitoring Plan.

63. **Climate Change.** The sensitivity of livestock (ruminants, pigs, poultry) and other components along livestock value chains to present climate and increasing extreme climate events in Southeast Asia is well documented.⁴ Significant increases in the rainy season flooding of the lower Mekong River are projected farther up in the Mekong flood plain in southern provinces such as Kandai where NVVC will be established. The estimated total cost of climate change adaptation measures of the Project is USD15.8 million, of which 42.6 percent will be financed by AIIB.

64. The Project contributes to GHG mitigation through various activities: (i) improved herd management; (ii) improved feed management; (iii) improved manure management and reduced use of energy and water along the livestock value chain; and (iv) forage production to improve carbon sequestration. The estimated total cost of climate change mitigation measures of the project is USD19.3 million, of which 100 percent will be financed by ADB and AIIB. The Project will also support the five voluntary principles of mainstreaming climate action. The modeled reduction in GHG intensity amounts to 11.1 tCO₂e/ton of meat produced by livestock affected by the Project.

65. **Social Aspects.** The Government aims to avoid any facilities that involve land acquisition resulting in physical displacement. A resettlement framework (RF) was nonetheless prepared to pre-empt any unforeseen impacts. RF outlines potential adverse impacts relating to permanent and temporary, physical, and economic displacement of both titleholders and non-titleholders and proposes mitigation measures. RF has been disclosed and it outlines the resettlement policy principles, procedures, and institutional arrangements to mitigate risks and offer sustainable livelihood and development opportunities to the people affected by the Project. It is based on applicable laws and regulations of the Government of Cambodia and ADB's SPS.

⁴ FAO, 2021. Climate-smart livestock production, a practical guide for Asia and the Pacific.

66. **Ethnic Minority and Community Development.** Ethnic minority groups are present in the provinces where project activities will be carried out. An ethnic minority development framework has been prepared to guide screening for impacts on ethnic minorities, conducting social impact assessments and the preparation of the ethnic minority development plan (EMDP) that relates to any specific component impacting ethnic minorities. EMDP will be implemented in parallel with the concerned specific component. The ethnic minority development framework provides guidance for project selection, information disclosure, consultation, and participation of ethnic minorities, implementation of ethnic minority development measures, monitoring and reporting of the EMDP planning and implementation, grievance redress, institutional arrangements for planning and implementation for indigenous people, etc.

67. **Occupational Health and Safety and Employment Opportunities.** During construction, the contractors are required to implement the construction health and safety plan in accordance with the international good practice in addition to the Occupational Health and Safety Guidelines for Cambodia. Complex health and safety risks during operation phase from the Project components are distinctive from each other. Therefore, their risk assessment and management plans are developed respectively. Overall, the Project will refer to good industry practices such as those included in International Finance Corporation Environmental Health and Safety guidelines for relevant sectors. COVID-19-specific recommended practices should additionally be strictly adhered to, including National Ministry of Health's guideline on COVID-19 and National Guidelines for Infection Prevention and Control for Healthcare Facilities of Cambodia.

68. **Community Health and Safety Measures.** Communities surrounding the facilities are mostly farmers. During construction, the Project will give particular attention to ensuring safety along roads and paths used by pedestrians, in addition to foreseeable community concerns such as air, noise, and water pollution. Residents and businesses will be informed in advance of the construction activities and their feedback and solutions discussed and agreed will be recorded and adopted as needed. During operational phase, biosafety risks will be closely monitored and managed, which includes specific training of responsible personnel and strict restriction of access to facilities.

69. **Gender Aspects.** ADB has categorized this project as effective gender mainstreaming. A project is assigned effective gender mainstreaming if the project outputs are designed to directly improve women's access to social services, and/or economic and financial resources and opportunities, and/or basic rural and urban infrastructure, and/or enhancing voices and rights, which contribute to gender equality and women's empowerment. The gender analysis carried out as part of project preparation has identified and assessed (i) strengths and weaknesses with regard to gender and social inclusion issues in the Cambodian livestock subsector; (ii) gender context in livestock value chain; and (iii) gender dynamics in the livestock value chain.

70. A gender equality and social inclusion action plan inclusive of a monitoring plan has been prepared to manage the challenges identified during the gender analysis and disclosed at disclosed at: <https://www.adb.org/projects/documents/cam-53240-003-gap>. Specifically, the gender equality and social inclusion action plan proposes a number of entry points including (i) creating income generating opportunities for women and ethnic

minorities in livestock value chain; (ii) incorporating gender responsive elements in physical design of project related infrastructure; (iii) creating equitable participation and opportunities for capacity development and income generation for women and ethnic minorities; (iv) enhancing gender capacity of government and training institutions strengthened; and (v) establishing gender responsive livestock policies and strategies. Furthermore, gender specific activities are also intertwined with project management.

71. Stakeholder Engagement, Consultation and Information Disclosure.

Meaningful and culturally appropriate stakeholder engagement will be carried out throughout the project cycle with various categories of stakeholders. The Project has prepared a stakeholder consultation participation plan and communication strategy to promote informed participation in decision making and information sharing. Consultations carried out during the project design phase involved engagement with government agencies, representatives of community and local governance structures and farmers. The consultations and communication sessions disseminated information and sought guidance on the project design (including prior experience in the livestock value chain), existing infrastructure, prior capacity building, adverse social and environmental impacts and mitigation including livelihood needs and opportunities. The results of the stakeholder engagement process carried out to date were used to develop and sharpen project design and mitigation measures outlined in the RF, ethnic group development framework and gender analysis and action plan.

72. The result of the stakeholder engagement in the initial phase of the Project indicated broad support for the project's community-based development approach, and the three outputs of resilient infrastructure, livelihood and capacity building, and policy reform to strengthen climate and disaster resilience, including for COVID-19. The environmental assessment and review framework, RF, ethnic group development framework and gender analysis and action plan have been disclosed on ADB's website at: <https://www.adb.org/projects/53240-003/main>, AIIB's website at: [Cambodia: Cross-border Livestock Health and Value-chain Infrastructure Improvement Project - Projects - AIIB](#), and the Government's website at: <https://www.facebook.com/photo/?fbid=484527140377807&set=pcb.484527880377733>.

73. Project Grievance Redress Mechanism (GRM). A project-specific, gender and culturally sensitive GRM will be established to receive, acknowledge, evaluate and facilitate the resolution to the complaints relating to ES issues with corrective actions proposed. The GRM will be established in each target province and each project site. This will be undertaken using understandable and transparent processes that are gender responsive, culturally appropriate and readily accessible to all segments of the affected people. Records of grievances received, corrective actions taken, and their outcomes shall be properly maintained.

74. AIIB Independent Accountability Mechanism. ADB's SPS will apply to the Project instead of AIIB's ESP. AIIB intends to rely on ADB's Independent Accountability Mechanism, the Accountability Mechanism, in lieu of the Bank's Project-affected People's Mechanism, to handle submissions by project-affected people relating to ES issues that may arise under the Project. Information on ADB's Accountability Mechanism is available at: <https://www.adb.org/site/accountability-mechanism/main>.

75. **Proposed follow-up.** AIIB will require semi-annual monitoring reports and retain rights to conduct supervision in the course of the Project implementation along with ADB.

E. Risks and Mitigation Measures

76. The geographical coverage of the Project is broad and border areas are the main targets, so the overall risk of the Project is medium. However, a wide range of measures to mitigate the risks have been identified and included in the Project. During project implementation, AIIB will continue to monitor the ES instruments such as environment management plans, environmental management plans, detailed resettlement plans, and EMDPs that may need to be prepared in line with the associated frameworks for them together with ADB counterpart. The relevant activities will take place within Cambodia and the Operational Policy on International Relations does not apply. The major risks and those mitigation measures are shown below.

Table 5: Summary of Risks and Mitigating Measures

Risk Description	Assessment (H/M/L)	Mitigation Measures
Disruption of livestock value chains and markets by COVID-19 or equivalent infections	M	The Project will adopt a One Health approach to strengthening livestock value chains and disease risk analysis capacity in Cambodia in a climate-friendly manner. The Project will strengthen disease risk measurement and analysis and improve communication capacity in both emergency and routine disease situations.
Low capacity to manage animal health and food safety risks	M	Project investment in capacity building and infrastructure related to DCZs, animal quarantine, livestock epidemiology, animal movement, animal production and health information system and increased vaccine production should reduce this risk significantly over the project life.
Insufficient technical or financial capacity of the target provinces to improve livestock production	H	ICT-based livestock production and health information will become widely available in text and voice forms through mobile phones.
Insufficient institutional experience and capacity of the relevant entities to implement and monitor the project	M	The project design has identified a broad range of technical assistance to support a shift in the implementing entity's <i>modus operandi</i> , toward more digital and information communication-led processes that should simplify management and improve transparency.

<p>Larger and longer duration consulting service contracts for some specialized technical service contracts may limit number of qualified firms, leading to reduced competition and higher prices.</p>	<p>L / M</p>	<p>The consulting contracts will be advertised internationally. Experience in the region suggests there are sufficient capable firms to maintain a competitive environment.</p>
<p>Insufficient women's engagement in the livestock service sector or in agribusiness management</p>	<p>M</p>	<p>The Project has set significant targets for women's capacity building and their access to technical information and investment grants.</p>
<p>Spread of TADs, zoonoses, and foodborne pathogens caused by unabated informal and uncontrolled live animal trade</p>	<p>M</p>	<p>The introduction of border quarantine facilities, standardized taxes and fees for livestock movement, DCZs, an expanded epidemiology program, animal identification and an animal health and production information system are expected to reduce this risk, including the opportunity for illegal trade.</p>
<p>Adverse impact of climate change on project investments</p>	<p>M</p>	<p>Project design includes an assessment of climate risk on project activities. Farmers and agribusinesses will be familiarized with this risk and assisted to incorporate it into their livestock sector investment and management plans.</p> <p>The adoption of Good Animal Husbandry Practices and GMP will help reduce climate risk.</p>

Annex 1: Results Monitoring Framework

Project Objective:		Strengthen animal and human health safety and promote cross-border livestock trading among countries in GMS including Cambodia, Lao PDR, Viet Nam, Thailand, and China.									
Indicator Name	Unit of measure	Base-line Data Year	Cumulative Target Values						End Target	Frequency	Responsibility
			2024	2025	2026	2027	2028	2029			
Project Objective Indicators:											
1. Number of samples per annum for TADs, zoonoses, foodborne pathogens and AMR at national animal health laboratories tested to promote regional health security	No. of samples	20,000	24,000	26,000	30,000	40,000	60,000	100,000	100,000	Annual	GDAH P
2. Number of live cattle and volume of meat per year increased through formal regional trade to neighboring countries	No. of live cattle / volume of meat (ton)	2,000 / 0	2,300 / 7	2,600 / 13	3,000 / 21	3,500 / 30	4,500 / 40	6,000 / 60	10,000 / 100 (By 2030)	Annual	GMS
Intermediate Results Indicators:											
1. Number of DCZs at major border sites in Cambodia established	No. of zones	0	0	0	1	1	1	2	2	Annual	GDAH P

Project Objective:	Strengthen animal and human health safety and promote cross-border livestock trading among countries in GMS including Cambodia, Lao PDR, Viet Nam, Thailand, and China.										
Indicator Name	Unit of measure	Base-line Data Year	Cumulative Target Values						End Target	Frequency	Responsibility
			2024	2025	2026	2027	2028	2029			
2. Number of laboratories certified for ISO 17025	No. of laboratories	0	0	1	2	3	5	7	7	Annual	GDAHP
3. Number of gender-responsive ICT-based platforms for improved livestock production and prevention of livestock epidemics developed	No. of platforms	0	0	1	1	2	2	3	3	Annual	GDAHP
4. Number of village animal health workers and share of women with capacity and knowledge on health, safety and production monitoring of livestock products	No. of workers (Share of women)	2,123 (10%)	2,300 (15%)	2,400 (18%)	2,600 (21%)	2,800 (24%)	3,000 (27%)	3,123 (30%)	3,123 (30%)	Annual	GDAHP

Annex 2: Sector Assessment

A. Sector Performance, Problems, and Opportunities

1. Cambodia became a lower middle-income economy in 2015, following strong economic growth over the last two decades; gross domestic product (GDP) grew at an average annual rate of over eight percent between 2000 and 2010 and seven percent between 2011 and the arrival of COVID-19. The National Bank of Cambodia expects the economy to grow by five percent in 2022 with inflation projected at 2.6 percent.¹ The tourism, garment, construction, real estate, and agriculture sectors underpin economic growth.²

2. In 2019-2020, the Ministry of Planning estimated that 17.8 percent of the population lived below the poverty line, with the poverty rate in rural areas being 22.8 percent.³ Rural household economic capacity is constrained by limited access to universal health and education, clean drinking water, sanitation, electricity, and the higher cost of these services in rural areas.⁴

3. **COVID-19.** Cambodia largely avoided a health crisis due to swift action to detect and contain local COVID-19 outbreaks including a large-scale vaccination program in 2021. The COVID-19 pandemic caused some initial disruptions to food supplies due to border closures in early 2020, however, agriculture markets recovered in the second half of 2020.⁵ Agriculture GDP grew by 0.4 percent in 2020 and is estimated to have grown by 1.0 percent in 2021 with growth of 1.3 percent projected for 2022. The government's post-COVID-19 pandemic recovery strategy for agriculture envisions finance and machinery for fruit and vegetable production, new aromatic rice varieties, promoting industrial crops such as cassava and cashew nuts, and improved livestock production. The government is disbursing USD50 million through the Rural Development and Agricultural Bank to provide low-interest loans to farmers and small and medium-sized enterprises.

4. **Agriculture economy.** In 2021, agriculture⁶ formed 23.4 percent of GDP⁷ The livestock sector formed just 11.7 percent of Agriculture GDP and 2.6 percent of total GDP. Between 2004-2012, annual agricultural growth was 8.7 percent⁸. Post 2012, annual agriculture growth has not exceeded two percent.⁹ Low labour productivity, limited value addition, falling agriculture prices since 2014 and weather have facilitated this decline, leading to farm households' income diversification. Agricultural income now forms about 25 percent of rural incomes and one-third of that of the poorest 40 percent of the population¹⁰. Agriculture employment fell from 73.5 percent in 2000 to 34.5 percent in 2019.¹⁰

5. **Livestock subsector.** The livestock subsector has, historically, been smallholder farmer based, especially for cattle and buffalo production which are 99.8 percent smallholder owned. Pig

¹ <https://www.b2b-cambodia.com/articles/cambodian-economic-outlook-for-2022/> (Citing National Bank of Cambodia: Macroeconomic and Banking Progress in 2021 and Outlook 2022).

² <https://www.economy.com/cambodia/indicators> (accessed on 19 January 2022).

³ <https://openknowledge.worldbank.org/entities/publication/71c8cd7a-b28b-5688-ba89-5c95af5b4994>

⁴ Andersen, H. (2019) Multidimensional Poverty Analysis – Cambodia. SIDA.

⁵ World Food Programme. 2020. Cambodia Food Price Update–August 2020. Rome.

⁶ Crops, forestry, fisheries, and livestock.

⁷ <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=KH> (accessed on 20 February 2022).

⁸ <https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=KH> (accessed on 20 Feb. 2022).

⁹ <https://data.worldbank.org/indicator/NV.AGR.TOTL.KD.ZG?locations=KH> (accessed on 20 Feb. 2022).

¹⁰ Footnote 13.

and poultry production, however, is increasingly commercialized, with 58.6 percent of pigs and 40 percent of poultry now held on commercial farms.

6. The 2013 Agricultural Census¹¹ reports that 75 percent of farm households raise livestock or poultry, of whom, 66 percent kept cattle or buffalo, 28 percent kept small livestock, mostly pigs, and 85 percent kept poultry, mostly native chickens. Most smallholders (86 percent) raised between 2-9 heads of cattle or buffalo, with only three percent having more than 10 heads. Most households (51 percent) raised between 3-29 heads of small livestock, with only one percent having 30 or more heads. Smallholder production is based on low input, low-output production systems, however commercial pig and poultry production is expanding.

7. Cambodia does not produce veterinary vaccines with most animal vaccines imported and sold by the private sector. Principal diseases include Haemorrhagic Septicaemia, Blackleg and FMD in cattle, porcine reproductive respiratory syndrome (or “blue ear”), FMD, hog cholera, pasteurellosis, erysipelas, classical swine fever, African swine fever and hog cholera in pigs, and Newcastle disease, fowl pox, infectious bronchitis, and Aujeszky’s disease in poultry. Asian highly pathogenic avian influenza is mostly under control. Most animals are impacted by internal and external parasites.

8. Domestic meat and egg demand is growing, driven by the country’s rapid economic growth, a relatively high-income elasticity for animal protein consumption, increasing urbanization and continued population growth. Cambodia needs to significantly improve the efficiency and competitiveness of its livestock industry to meet domestic demand. Promisingly, the livestock sector, particularly commercial pig, and poultry production, has shown recent strong growth. Between 2015 to 2021, the national beef herd has increased by 1.7 percent, the buffalo herd, following regional trends, has declined by 14.6 percent, the pig herd, which has been deeply impacted by African Swine Fever and sporadic border trade closures, has grown by 8.8 percent and the poultry flock by 58.8 percent. Importantly, over the same period, commercial pig farming has grown by 324.6 percent and commercial poultry farming by 174.8 percent. Despite this recent livestock population growth surge and increasing sector commercialization, the growing domestic demand for meat and eggs, even with the proposed project support, is likely to leave Cambodia a net pork, beef and poultry meat and egg importer. In 2021, poultry production matched domestic demand and beef production exceeded demand by about four percent, while pork production only met 72 percent of demand.¹²

9. **Agriculture and livestock sector constraints.** The major constraints to the development of the Cambodian agriculture and livestock sector include: (i) water availability; (ii) sub-optimal access to quality inputs and lack of appropriate technologies; (iii) high cost of production relative to yield, particularly labor and mixed feed costs; (iv) insufficient access to quality plant and cattle genetics; (v) the relatively high incidence of endemic diseases and inadequate vaccination; (vi) inadequate extension services; (vii) limited access to capital; (viii) insecure land tenure and risk of appropriation; (ix) low levels of value addition to meat; (x) poor infrastructure in some areas; (xi) high market volatility and (xii) corruption. These constraints apply equally to all agriculture subsectors.

10. In 2021 there were 23 feed mills operating in Cambodia, with two more under construction, with total mixed feed production of 1.24 million tons, utilizing just 55 percent of the built capacity

¹¹ National Institute of Statistics, Ministry of Planning and Ministry of Agriculture, Forestry and Fisheries. Census of Agriculture of the Kingdom of Cambodia 2013. National Report on Final census results. Phnom Penh, 2015.

¹² GDAH Annual Report 2021. Phnom Penh

of 2.27 million tons. In 2021, Cambodia imported 322,000 tons of animal feed, 679,000 tons of raw materials and 29,800 tons of additives.¹³ High electricity and raw material costs and competitive mixed feed imports lead to the underutilized mill capacity (footnote 12).

11. Commercial pig and poultry farmers use imported private sector owned and supplied genetic resources, which largely meet market demand. Cattle genetics, mostly imported as frozen semen and bulls from Viet Nam and Thailand are more difficult to access and insufficiently diverse to meet Cambodia's need for climate adapted, compact beef animals.

12. Cambodia has begun implementing measures to: (i) improve sanitary and phytosanitary standards; (ii) contain TADs; (iii) improve surveillance of veterinary drugs, antibiotics, and feed; (iv) control the safety of animal food products; and (v) improve border release procedures.¹⁴ Insufficient funding means that disease incidence remains relatively high and meat safety inspection inadequate.

13. Meat from domestically slaughtered animals is primarily sold warm in wet markets. There is very little processing of meat products and little cold chain capacity, with chilled meat limited to boutique butchers' shops in major cities. Most slaughterhouses use inhumane killing techniques and both slaughterhouses and wet markets are, predominantly, unhygienic. Constraints to increased agro processing include the unreliability and cost of electricity, informal payments for permits and documentation, unregistered competition, lack of skills and information, and limited access to medium term credit, technology, and machinery. Only about 10 percent of Cambodia's total agricultural output is processed within the country (footnote 15).

14. The Cambodia Livestock Raisers Association is the main livestock producer organization, and the Federation of Cambodian Farmers Organizations for Development is an apex farmer organization. Both receive Development Partner support and have modest membership, primarily through partner agriculture cooperatives. Local level farmer organizations are often unregistered. The government is reorienting public extension services, shifting from supply to demand-driven extension, however, most livestock extension is publicly based, and animal health focused. Investment is needed to: (i) better harness private information sources; (ii) use ICT; (iii) better link of farmers to markets.¹⁵

15. Corruption and cronyism constrain equitable development in Cambodia. The country has the highest incidence of corruption among its structural peers and economic competitors.¹⁶ Progress of reforms in public administration, public FM, decentralization, and legal and judicial structure has been sluggish.¹⁷

16. **Climate Change.** The country is presently ranked 12th out of 181 countries in the Global Climate Risk Index (over the period 1999–2019)¹⁸ and 16th out of 181 countries in the World Risk

¹³ <https://www.feedstrategy.com/animal-feed-manufacturing/cambodia-aims-to-boost-animal-feed-production/> (accessed on 02 February 2022)

¹⁴ ADB. 2016. *Greater Mekong Subregion Health Security Project*. Manila; ADB. 2013. *Trade Facilitation: Improved Sanitary and Phytosanitary Handling in the Greater Mekong Subregion Trade Project*. Manila; ADB. 2018. *Strategy for Promoting Safe and Environment-Friendly Agro-Based Value Chains in the Greater Mekong Subregion and Siem Reap Action Plan, 2018–2022*. Manila; ADB. 2019. *Operational plan for regional cooperation and integration*. Manila; ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila.

¹⁵ [KAS - Khmer Agriculture Suite](#)

¹⁶ Transparency International. *Corruption Perceptions*. (<https://www.transparency.org/en/cpi/2021>) Index 2019

¹⁷ The World Justice Project's 2021 Rule of Law Index ranked Cambodia 137th out of 138 countries.

¹⁸ https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_1.pdf

Index in 2020.¹⁹ Cambodia is projected to experience warming of 3.1°C by the 2090s, against the baseline conditions over 1986–2005 under the highest emissions pathway, Representative Concentration Pathway 8.5. Increased incidence of extreme heat is a major threat to human health in Cambodia, especially for agricultural laborers.²⁰

B. Government Sector Strategy

17. The National Strategic Development Plan 2019-2023 provides the framework for the implementation of the Rectangular Strategy Phase IV.²¹ In the Agriculture, Natural Resources and Rural Development sector the plan and strategy highlight: (i) sanitary and phytosanitary law and contract law enforcement; (ii) private investment for farm income diversification, particularly for high value agriculture crops;²² (iii) fostering livestock and aquaculture production and commercialization; (iv) strengthening management of economic land concessions; and (v) expanding the irrigated area. Rural development priorities include additional investment in rural roads and electricity supply and access to clean water and sanitation.

18. The Master Plan for Agriculture Sector Development 2030 and the Agriculture Strategic Development Plan 2019-2023 target improved productivity, quality, commercialization, diversification, and the expansion of the agro-processing industry. Sub-sector-specific policies include the Strategic Planning Framework for Fisheries 2015-2024, National Cassava Policy 2020-2025 and the Strategic Planning Framework for Livestock Development 2016-2025.²³

19. The Strategic Planning Framework for Livestock Development: 2016-2025 includes seven specific strategies: (i) strengthening animal production, including the promotion of animal management and breeding; (ii) strengthening animal health and public veterinary health; (iii) strengthening the dissemination and implementation of laws and regulations; (iv) promoting research and development; (v) developing institutional and human resource capacity; (vi) promoting public-private partnerships in animal production; and (vii) strengthening national and international economic and technical cooperation.

¹⁹ B. Behlert, R. Diekjobst, C. Felgentreff, P. Mucke, L. Pries, K. Radtke, D. Weller. World Risk Report 2020. Berlin. Bündnis Entwicklung Hilft / Ruhr University Bochum – Institute for International Law of Peace and Armed Conflict

²⁰ Climate Risk Profile: Cambodia (2021): The World Bank Group and Asian Development Bank.

²¹ Ministry of Planning. 2019. National Strategic Development Plan, 2019–2023. Phnom Penh

²² Rice, cassava, mango, cashew nuts, banana, rubber, vegetables.

²³ Other policies include “the National Forest Program 2010-2029”, the “Cambodia Climate Change Strategic Plan 2014-2023”, the “National Strategic Plan on Green Growth 2013- 2030”, the “Cambodia Sustainable Development Goals” AND The Medium-Term Plan for the Implementation of Cambodia’s Trade Sector-wide Approach (SWAp), 2016–2020.

Annex 3: Sovereign Credit Fact Sheet

Recent Economic Development

1. Cambodia is a lower-middle-income country with an income per capita of around USD 1,600 and a population of 16.3 million. The country achieved high growth rates of above 7 percent since 1991, thanks to an increase in exports, strong internal demand, and an increase in FDI. Construction, garments and footwear, as well as tourism were the main drivers.
2. In 2020, the economy was significantly hit by COVID-19, mainly due to a decrease in external demand, leading to a contraction of 3.1 percent in real GDP. After reopening the economy at the end of 2021, GDP growth was estimated to recover to 3.0 percent in 2021 and 5.0 percent in 2022 due to the revival of tourism sector and strong growth in export.
3. Cambodia has been running persistent current account deficits, and the deficit is estimated to widen substantially in 2021. Imports of gold surged while tourism was subdued in mid-2021, driving the current account deficit to widen significantly to over 47 percent of GDP. However, better trade performance in 2022, thanks to strong garment exports, helped to reduce the deficit to 26.9 percent. Despite high deficits, the exchange rate has been stable, while foreign reserves have been adequate, covering around nine months of imports.
4. Inflation rose to 5.3 percent in 2022 due to the rising global oil and food prices.
5. To counteract the negative impact of the pandemic, the government enacted countercyclical measures, which led to a budget deficit of 7.1 percent of GDP in 2021. Fiscal stimulus continued into 2022, but revenue improved with economic recovery, and the deficit narrowed to 4.1 percent in 2022. Public debt increased to around 36 percent of GDP in 2021 and 2022.

Economic Indicators	2019	2020	2021*	2022*	2023*	2024*
Real GDP growth (%)	7.1	-3.1	3.0	5.0	5.8	6.2
CPI Inflation (average, % change)	1.9	2.9	2.9	5.3	3.0	3.0
General government fiscal balance	3.0	-3.4	-7.1	-4.1	-5.0	-3.5
General government gross debt	28.2	34.4	35.9	36.5	37.5	38.8
Current account balance	-15.0	-8.5	-47.5	-26.9	-12.2	-9.3
Public gross financing needs /1	-2.2	4.4	8.1	5.2	6.1	4.5
External debt /1	28.2	34.4	35.9	36.1	36.3	36.6
Gross international reserves (months of imports) /1	9.8	9.6	9.4	9.1	9.5	9.9
Gross international reserves (USD billion) /2	18.8	21.3	20.3	19.3		
Exchange rate (LCU/USD, EOP) /3	4,055	4,035	4,064	4,108	4,102	

Source: IMF World Economic Outlook April 2023; in percent of GDP, unless indicated otherwise; 1/ Data from IMF country report 22/371; 2/ Data from IMF International Financial Statistics; 3/ Data from Refinitiv, end-of-period (for 2023: as of May 26); ** denotes projections

Economic Outlook and Risks

6. Looking ahead, the Cambodian economy is expected to see slower growth compared to the pre-pandemic period. IMF projects 5.8 percent and 6.2 percent growth for 2023 and 2024

respectively, with uncertainties regarding international tourism, manufacturing, and other business activities weighting on growth. On the upside, the authorities' ongoing reforms to boost investment and new trade agreements should support growth over the medium term.

7. Other risks include the high concentration of credits in real estate for both banking and non-banking sectors, which creates systematic risk to the financial sector, and vulnerability to natural disasters such as floods and droughts, due to climate change.

8. Fiscal deficit is expected to widen slightly in 2023 due to the planned wage increase and continued spending on social protection. Thus, public debt is expected to increase to 37.5 and 38.8 percent of GDP for 2023 and 2024 respectively. Overall, debts are considered sustainable and are well within the official threshold of 55 percent.

9. The current account deficit is projected to continue improve to 12.2 percent and 9.3 percent of GDP in 2023 and 2024, respectively, assuming recovery in tourism and new bilateral trade agreements with major trade partners in Asia effective in 2022. Public external debt should remain within the official threshold (40 percent of GDP for public external debt), but is sensitive to shocks in the current account balance.

10. In November 2022, Moody's affirmed the Cambodia's B2 credit rating, but revised the outlook from stable to negative. The negative outlook reflects the widening of the current account deficit and transparency concerns. (Neither Fitch nor S&P have ratings for Cambodia).