



Report and Recommendation of the President to the Board of Directors

Project Number: 46081-002
September 2015

Proposed Loan People's Republic of China: Henan Sustainable Livestock Farming and Product Safety Demonstration Project

This is the version of the document approved by ADB's Board of Directors that excludes information that is subject to exceptions to disclosure set forth in ADB's Public Communications Policy 2011.

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 7 September 2015)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1570
\$1.00	=	CNY6.3701

ABBREVIATIONS

ADB	–	Asian Development Bank
CAHB	–	county animal husbandry bureau
EMP	–	environmental management plan
FSL	–	Food Safety Law
HACCP	–	hazard analysis and critical control point
HAHB	–	Henan Animal Husbandry Bureau
HPG	–	Henan Provincial Government
IEE	–	initial environmental examination
ISO	–	International Organization for Standardization
MAHB	–	municipal animal husbandry bureau
PAM	–	project administration manual
PMO	–	project management office
PPE	–	project participating enterprise
PRC	–	People's Republic of China
SPS	–	Safeguard Policy Statement

NOTE

In this report, "\$" refers to US dollars.

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PROJECT AT A GLANCE

1. Basic Data		Project Number: 46081-002	
Project Name	Henan Sustainable Livestock Farming and Product Safety Demonstration Project	Department /Division	EARD/EAER
Country Borrower	China, People's Republic of People's Republic of China	Executing Agency	Henan Provincial Government (HPG)
2. Sector	Subsector(s)	ADB Financing (\$ million)	
✓ Agriculture, natural resources and rural development	Agricultural policy, institutional and capacity development		6.21
	Agro-industry, marketing, and trade		17.94
	Livestock		44.85
		Total	69.00
3. Strategic Agenda	Subcomponents	Climate Change Information	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Mitigation (\$ million)	10.00
Environmentally sustainable growth (ESG)	Eco-efficiency	CO ₂ reduction (tons per annum)	10
	Global and regional transboundary environmental concerns	Climate Change impact on the Project	Low
4. Drivers of Change	Components	Gender Equity and Mainstreaming	
Governance and capacity development (GCD)	Institutional development	Effective gender mainstreaming (EGM)	✓
Knowledge solutions (KNS)	Knowledge sharing activities		
Partnerships (PAR)	Commercial cofinancing Implementation Private Sector		
Private sector development (PSD)	Promotion of private sector investment Public sector goods and services essential for private sector development		
5. Poverty Targeting		Location Impact	
Project directly targets poverty	No	Rural	High
6. Risk Categorization:	Low		
7. Safeguard Categorization	Environment: B Involuntary Resettlement: B Indigenous Peoples: C		
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		69.00	
Sovereign Project loan: Ordinary capital resources		69.00	
Cofinancing		0.00	
None		0.00	
Counterpart		79.70	
Government		3.84	
Beneficiaries		75.86	
Total		148.70	
9. Effective Development Cooperation			
Use of country procurement systems		No	
Use of country public financial management systems		Yes	

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to the People's Republic of China (PRC) for the Henan Sustainable Livestock Farming and Product Safety Demonstration Project.¹

2. The project aims to demonstrate model livestock production and processing with improved environmental sustainability and product safety in nine project counties in Henan Province.² The project will help (i) the Henan Provincial Government (HPG) upgrade livestock product safety monitoring and inspection facilities; and (ii) nine medium- and large-sized private livestock production and/or processing enterprises, or project participating enterprises (PPEs),³ improve food safety control and implement environmentally sustainable livestock production and processing.⁴ Henan is suitable for the demonstration given the province's strategic importance in food security and agriculture in the PRC.

II. THE PROJECT

A. Rationale

3. Henan Province covers a large part of the fertile North China Plain, with a population of 104.89 million; 62.34 million people (59.4%) live in rural areas, where the poverty rate is 13.1%. Agriculture has traditionally been an important part of Henan Province's economy, contributing 12.7% of the provincial gross domestic product and 41.8% of the total labor force in 2012. Henan Province is also known for its significant contribution to national food security, with the PRC's highest output of wheat, second-highest output of rice, and second-highest livestock production in value in 2012.

4. With economic growth and increasing household incomes, consumption of animal protein-based food, particularly meat products, has also increased in the PRC. During 1978–2012, per capita meat consumption doubled in urban and more than tripled in rural areas,⁵ with further growth in consumption expected. Food safety awareness is rising, and consumers are demanding properly processed meat products with adequate labeling. Livestock sector development in the PRC is necessitated by fast-growing domestic demand for high-quality meat products that are trusted by food safety-conscious consumers.

5. The Government of the PRC faces tremendous pressure in ensuring sufficient supply of high-quality meat products to meet the domestic demand; this is complicated by increasingly challenging resource constraints, including a decline in the active rural labor force; and

¹ The design and monitoring framework is in Appendix 1.

² The nine project counties comprise (i) Gushi County, (ii) Lainyuan County of Shanqiu Municipality, (iii) Luoning County of Luoyang Municipality, (iv)–(v) Neixiang and Xinye counties of Nanyang Municipality, (vi) Shanxian County of Sanmenxia Municipality, (vii)–(viii) Xuchang and Yanling counties of Xuchang Municipality, and (ix) Zhengyang County of Zhumadian Municipality.

³ Those PPEs were selected based on criteria chosen by HPG. The selection criteria and process are summarized in Annex 4 of the project administration manual (accessible from the list of linked documents in Appendix 2). The nine PPEs comprise (i) four cattle farming enterprises, two of which have processing capacity; (ii) three pig farming enterprises, two of which have processing capacity; and (iii) two poultry farming enterprises, both of which have processing capacity.

⁴ The Asian Development Bank (ADB) provided project preparatory technical assistance for the Henan Value Chain and Products Safety Demonstration Project (TA 8352-PRC).

⁵ G. Zhou, et al. 2012. China's meat industry revolution: Challenges and opportunities for the future. *Meat Science*. 92 (3), pp.188–196. Elsevier.

degradation and reduction in the quantity of arable land and water. The national government proposes to address these challenges by upgrading to intensive and modernized livestock production and processing systems; but this faces two major challenges: (i) ensuring the safety of livestock and meat products, and (ii) addressing pollution from livestock waste.

6. During the Twelfth Five-Year Plan period (2011–2015), the national government has made significant progress in food safety management to control recurrent food safety incidents—by increasing cohesion in government food safety supervision, unifying food safety standards, and increasing noncompliance penalties.⁶ The national government issued the first comprehensive Food Safety Law (FSL) in 2009, which is being further revised. The FSL and relevant regulations stipulate that (i) local governments have overall responsibility for the supervision and management of food safety in their jurisdiction; and (ii) food producers and traders are responsible for strict compliance with the FSL, relevant regulations, and food safety standards.

7. Although HPG has been upgrading its food safety infrastructure, procedures, and enforcement capacity, the substantial improvements needed for full compliance with the strengthened food safety regulations have yet to be made. Provincial governments are required to improve hazard risk assessment as part of their existing monitoring and inspection responsibility, while lower-level government administrations are required to be equipped with rapid screening and testing capacity to enhance their sampling and inspection efficiency. Food producers, particularly agro-enterprises, are required to have adequate quality control and self-testing capacity. As a major food producer for the PRC, Henan Province needs to further improve food safety management—particularly of meat and other livestock products—undertaken by HPG, local governments, and food producers, which poses challenges because of the complex supply chain.

8. The expansion of the intensive livestock production has significant negative environmental impacts. The waste produced by the livestock farms and enterprises contains high concentrations of pollutants, and is often discharged without proper treatment, resulting in serious land and water pollution; and threats to public safety. In 2010, only 36.5% of the large-scale livestock farms in Henan Province met the PRC's environmental standards for waste discharge and control.⁷ Livestock waste also causes significant greenhouse gas emissions. The national government has promoted production of renewable energy using livestock waste, particularly for medium- and large-scale livestock farms and enterprises; but many lack proper waste treatment facilities. The reluctance of livestock enterprises to invest in waste treatment facilities and the national government's weak enforcement of environmental laws makes it difficult to address this negative environmental impact.

9. The project supports the long-term goal of building a harmonious and moderately prosperous society through livelihood improvement, and regionally balanced and environmentally sustainable growth in the PRC's Twelfth Five-Year Plan (2011–2015).⁸ It also supports the national government's renewed commitment to food safety system improvement and sustainable environmental and natural resources management in the third plenum of the

⁶ S. McDonald. 2008. *Nearly 53,000 Chinese children sick from milk*. Associated Press. Melanin-adulterated powdered milk caused over 50,000 babies to be hospitalized and killed six.

⁷ Henan Provincial Livestock Bureau, Henan Provincial Agriculture Department, Henan Provincial Environmental Protection Department. 2012. Guiding Opinions on Further Strengthening Control of Discharge of Animal Wastes [N/OL]. 24 March 2012. <http://www.hnvmy.gov.cn>.

⁸ Government of the People's Republic of China, National People's Congress. 2011. *Outline of the Twelfth Five-Year Plan of the People's Republic of China, 2011–2015*. Beijing.

Eighteenth Communist Party of China Central Committee (2013), which will guide the Thirteenth Five-Year Plan (2016–2020).⁹ The project is aligned with the country partnership strategy, 2011–2015 for the PRC of the Asian Development Bank (ADB) that supports the national government’s overarching strategic goal by focusing on inclusive and environmentally sustainable growth;¹⁰ and the ADB operational plan for agriculture and natural resources, which promotes increased productivity and resource efficiency, agribusiness development, and enhanced food safety and quality.¹¹

10. The project will also complement ADB’s technical assistance on National Food Safety Regulatory and Strategic Framework and build upon lessons learned from previous projects in Henan Province, which include the effectiveness of medium-term financing for agro-enterprises and farmers, cooperation mechanisms between agro-enterprises and farmers, and the importance of capacity building.¹²

B. Impact and Outcome

11. The impact will be (i) upgraded agricultural industrialization and large-scale operation, (ii) enhanced capacity in ensuring agro-product quality and safety, and (iii) strengthened conservation of agricultural resources and ecosystems. The outcome will be demonstration of model livestock production and processing with improved environmental sustainability and product safety.

C. Outputs

12. The outputs will be (i) upgraded livestock product safety monitoring and inspection facilities, (ii) establishment of environmentally sustainable livestock production facilities, and (iii) strengthened capacity and project management.

13. **Output 1: Upgraded livestock product safety monitoring and inspection facilities.** This output will support HPG’s effort to improve the livestock and feed product safety monitoring and inspection system by (i) helping the Henan Animal Husbandry Bureau (HAHB), five project municipal animal husbandry bureaus (MAHBs),¹³ and nine project county animal husbandry bureaus (CAHBs) upgrade and/or establish laboratories and provide testing equipment;¹⁴ (ii) helping PPEs upgrade and/or establish in-house testing facilities for livestock and feed products; and (iii) providing information technology equipment and software for HAHB, MAHBs, CAHBs, and the PPEs to establish a laboratory information management system, which will complement the comprehensive livestock information platform and traceability system being financed by HPG. This output, together with relevant training activities of output 3, will help HPG

⁹ Government of the People’s Republic of China. 2013. *Communist Party of China Central Committee Resolution Concerning Some Major Issues in Comprehensively Deepening Reform*. Beijing.

¹⁰ ADB. 2012. *Country Partnership Strategy: People’s Republic of China, 2011–2015*. Manila.

¹¹ ADB. 2015. *Operational Plan for Agriculture and Natural Resources: Promoting Sustainable Food Security in Asia and the Pacific in 2015–2020*. Manila (draft).

¹² ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grant for the Henan Sustainable Agriculture and Productivity Improvement Project in the People’s Republic of China*. Manila; ADB. 2004. *Technical Assistance to the People’s Republic of China for the National Food Safety Regulatory and Strategic Framework*. Manila; and ADB. 2000. *Report and Recommendation of the President to the Board of Directors: Proposed Loan for the West Henan Agricultural Development Project in the People’s Republic of China*. Manila.

¹³ The five municipalities comprise Luoyang, Nanyang, Sanmenxia, Shanqiu, and Xuchang.

¹⁴ Among the nine project counties, Luoning, Neixiang, and Xinye currently do not have livestock product testing laboratories.

strengthen its institutional capacity for livestock and feed product safety monitoring and inspection; and enforcement of relevant regulations.

14. Output 2: Establishment of environmentally sustainable livestock production facilities. This output will promote environmental sustainability and energy conservation in livestock production and processing. The project will help the PPEs establish (i) livestock production and meat processing facilities; (ii) feed processing facilities; and (iii) in-house animal waste and wastewater treatment and/or processing facilities, including biogas generators and organic fertilizer processing facilities. These facilities will be equipped with energy- and water-saving technologies. The output is expected to generate significant environmental benefits, including avoided greenhouse gas emissions; and employment and income-generating opportunities at the PPEs for local people and farmers who supply livestock, raw materials, and other inputs to the PPEs, and/or receive organic fertilizer from the PPEs.

15. Output 3: Strengthened capacity and project management. This output will comprise capacity-development activities and project management. The project will provide (i) training on livestock product safety for HAHB and the MAHBs, CAHBs, and PPEs; (ii) training on environmentally sustainable livestock production and processing for the PPEs and associated farmers from which the PPEs source their livestock;¹⁵ (iii) training on project management for project management offices (PMOs) of five project municipal governments and nine county governments, HAHB, the PPEs, and other relevant government agencies; and (iv) oversea and domestic study tours and training.¹⁶ Under this output, the project will help the PPEs establish hazard analysis and critical control point (HACCP) and/or HACCP-based food quality control systems, such as the China Good Agricultural Practices. The training will also cover animal welfare and health, such as appropriate use of animal medicines as part of International Organization for Standardization (ISO) 9001 requirements. The project will also provide office equipment for project management. A project implementation consultant team, which will be financed by HPG, will assist (i) the provincial PMO in managing project implementation and organizing training on project management and environmentally sustainable livestock production and processing; and (ii) HAHB in organizing training on livestock product safety. Training of trainers will be introduced to maximize the impact of capacity development.

16. Multilevel approach to food safety control. One of the two key project features is a multilevel approach to food safety control: (i) under output 1, the project will assist three administrative levels (HAHB, MAHBs, and CAHBs) of food safety regulators and producers (PPEs) in upgrading their quality-testing capacity to meet the PRC's food safety regulations. The strengthened food safety control will not only improve the safety of livestock products and feed; (ii) under output 3, the project will provide capacity building to help the PPEs adopt HACCP and/or HACCP-based food quality control systems; and (iii) under output 1, the project will help establish the laboratory information management system through which HAHB will access livestock product quality-testing results provided by the PPEs. The resultant livestock product safety monitoring and inspection system is expected to enable the food safety regulators to monitor the PPEs' up-to-date information on livestock and its products to mitigate the risk of distribution of contaminated food and animal disease outbreaks. Establishment of the system is an important element in HPG's efforts to build the comprehensive livestock

¹⁵ The areas to be covered by the training include market-based production system certification standards (e.g., hazard analysis and critical control point and China Good Agricultural Practices); animal welfare; biosecurity, including animal disease control; and waste management. Further details are included in Annex 1 of the Project Administration Manual (accessible from the list of linked documents in Appendix 2).

¹⁶ A list of training planned under the project is provided in Annex 1 of the Project Administration Manual (accessible from the list of linked documents in Appendix 2).

information platform and traceability system. The resulting food safety improvements will benefit a number of consumers.

17. **Environmentally sustainable livestock production.** A second key project feature is the demonstration of environmentally sustainable livestock production and processing. For sustainable sector growth, environmental impacts need to be mitigated as much as possible through efficient resource use. Despite their significant production activities, most PPEs still rely on conventional waste management, involving the drying of waste and its application to crops. This project will help all PPEs invest in facilities to enable proper waste treatment. Six PPEs will process solid waste for organic fertilizer, while five PPEs will process liquid waste through biogas digesters to generate gas for power generation and residues for organic fertilizer. As a result, the project is expected to avoid more than 1,000 tons per year of carbon dioxide equivalent greenhouse gas emissions; and provide 56,000 tons per year of organic fertilizer. Three PPEs will use part of the organic fertilizer to grow feed and other crops which will promote feed safety and environmental sustainability in feed material production at the PPEs and elsewhere. Although production of feed materials that are sourced by PPEs from markets are beyond the project scope, the PPEs will be encouraged to use certified feed with quality assurance standards, such as the China Good Agricultural Practices, to promote food safety.

18. The project will also establish a mechanism to monitor and promote water- and energy-saving technologies through an environmental sustainability monitoring program, which was developed and pilot-tested by the PMO and the PPEs during project preparation and will be implemented under the project.¹⁷ The program will record quarterly water and energy use in new and existing PPE facilities of the same livestock type and in the same counties. The program is anticipated to enable the PPEs to increase efficiency, which may have financial and environmental benefits. An added value is the inclusion of existing facilities and expansion of the program's benefits beyond the project. This appears to be among the first long-term monitoring programs for water and energy use by agricultural enterprises in Henan Province.

D. Investment and Financing Plans

19. The project is estimated to cost \$148.70 million (Table 1). Detailed cost estimates are provided in the project administration manual (PAM).¹⁸

Table 1: Project Investment Plan
(\$ million)

Item	Amount ^a
A. Base Cost^b	
1. Upgraded livestock product safety monitoring and inspection facilities	10.38
2. Establishment of environmentally sustainable livestock production facilities	116.27
3. Strengthened capacity and project management	2.56
Subtotal (A)	129.21
B. Contingencies^c	13.28
C. Financing Charges During Implementation^d	6.21
Total (A+B+C)	148.70

^a Includes taxes and duties of \$6.21 million to be financed from the Asian Development Bank (ADB) loan, \$5.82 million from the project participating enterprise resources, and \$0.18 million from government resources. ADB financing of taxes and duties is deemed acceptable as the (i) amount is within the reasonable threshold identified during the preparation of the country partnership strategy, (ii) amount does not represent an excessive share of the

¹⁷ The program is described in section E of the Initial Environmental Examination and in section VIII of the Project Administration Manual (both accessible from the list of linked documents in Appendix 2).

¹⁸ Project Administration Manual (accessible from the list of linked documents in Appendix 2).

project investment plan, (iii) taxes and duties apply only to ADB-financed expenditures, and (iv) financing of taxes and duties is material and relevant to the success of the project. Transportation and insurance costs may be financed by the ADB loan.

^b In mid-2015 prices. Of the base cost, 47.4% will finance civil works; 33.0%, equipment; and 4.2%, consulting services, including survey, design, and inspection.

^c Physical contingencies computed at 5% for all expenditure categories. Price contingencies computed based on cost escalation factors of 3.0% on local currency costs for 2016–2021, and 1.5% for 2016, 1.4% for 2017, and 1.5% for 2018–2021 on foreign exchange costs.

^d Includes interest and commitment charges. Interest during construction for the ADB loan has been computed at the 5-year US dollar swap rate plus a spread of 0.5%. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank estimates.

20. The national government has requested a loan of \$69 million from ADB's ordinary capital resources to help finance the project. The loan will have a 15-year term, including a grace period of 5 years; an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; a commitment charge of 0.15% per year; and such other terms and conditions set forth in the draft loan and project agreements.¹⁹ The national government will be the borrower of the loan and relend the loan to HPG. HPG will in turn onlend a majority of the loan proceeds to project municipal and county governments, which will make the loan proceeds available to nine PPEs on the same terms and conditions as those of the ADB loan to the national government. HPG will make the remaining loan proceeds available for output 3 activities and for HAHB to implement relevant part of output 1 activities. HAHB and the PPEs will assume foreign exchange and interest rate risks for their portions of the ADB loan proceeds. The PPEs will finance part of the civil work cost; part of the equipment cost; whole of the survey, design, and inspection cost; and whole of working capital. The financing plan is in Table 2.

Table 2: Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank	69.00	46.4
Project participating enterprises	75.86	51.0
Henan Provincial Government	3.84	2.6
Total	148.70	100.00

Source: Asian Development Bank estimates.

E. Implementation Arrangements

21. HPG will be the executing agency for overall project planning and management. The project coordination group will provide policy guidance, oversight, and interdepartmental coordination. The PMO, established under the Foreign Economic Cooperation Center of Henan Provincial Agriculture Department, will provide oversight and coordination for day-to-day project implementation activities.²⁰ Municipal and county PMOs will facilitate project implementation at municipal and county levels. The implementing agencies are HAHB and nine PPEs for output 1, and the same nine PPEs for output 2. The PMO will organize training under output 3. HAHB will implement output 1 in coordination with the five MAHBs and nine CAHBs. The implementation arrangements are summarized in Table 3 and described in detail in the PAM (footnote 18).

¹⁹ The interest and commitment charges during implementation will not be capitalized in the loan.

²⁰ The Foreign Economic Cooperation Center is assigned as the PMO for foreign-funded projects implemented by the Henan Provincial Agriculture Department.

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	April 2016–March 2021		
Estimated completion date and loan closing date	31 March 2021 30 September 2021		
Management			
(i) Oversight body	Project coordination group Chair: Director general, Henan Provincial Agriculture Department Members: senior representatives from relevant agencies, such as the Henan Animal Husbandry Bureau, the Henan Development and Reform Commission, the Henan Environmental Protection Department, the Henan Finance Department, and the Henan Poverty Alleviation Office		
(ii) Executing agency	Henan Provincial Government		
(iii) Key implementing agencies	Henan Provincial Animal Husbandry Bureau; Henan Afanti Food Co., Ltd.; Henan Dadi Animal Husbandry Co., Ltd.; Luoyang Donghan Poultry Co., Ltd.; Henan Fenghua Breeding Share Co., Ltd.; Henan Hengtianran Pasture Farming Co., Ltd.; Kerchin Cattle Industry Nanyang Co., Ltd.; Muyuan Foodstuff Co., Ltd.; Henan Niuniu Animal Husbandry Co., Ltd.; and Henan Sangao Agriculture and Animal Husbandry Co., Ltd.		
(iv) Implementation unit	Project Management Office, Foreign Economic Cooperation Center, Henan Provincial Agriculture Department		
Procurement	International competitive bidding	3 contracts	\$14.56 million
	National competitive bidding	38 contracts	\$82.92 million
	Shopping	4 contracts	\$0.29 million
Retroactive financing and/or advance contracting	Advance contracting and retroactive financing will be used. Retroactive financing will finance up to \$13.8 million of eligible expenditures (20% of the Asian Development Bank [ADB] loan) incurred prior to loan effectiveness, but not earlier than 12 months before the loan signing.		
Disbursement	The loan proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2015, as amended from time to time) and detailed arrangements agreed upon between ADB and the national government.		

Source: Asian Development Bank.

III. DUE DILIGENCE

A. Technical

22. Livestock waste and wastewater treatment facilities were designed to meet the post-treatment quality specifications for water and solid wastes. Measures were added to ensure optimal operation, such as biogas digesters with wind insulation, heating systems, and overhead glasshouses to minimize the reduced functionality of biogas digesters during the cold season. Support by the project implementation consultants and training will ensure the effective operation of the facilities by the PPEs. Testing equipment specifications for HAHB, MAHBs, and CAHBs; and in-house testing equipment for PPEs were assessed for compliance with the national standards. Training on biosecurity, animal welfare, and introduction of the HACCP and ISO certification standards for operation procedures will promote safer livestock production and processing systems.

B. Economic and Financial

23. The economic analysis confirmed economic viability of the project, with an overall economic internal rate of return of 18.5% and an economic net present value of CNY303.0 million. The economic internal rates of return for the individual subprojects vary (14.1%–30.5%). The financial analysis confirmed the overall financial viability of output 2, the only revenue-generating output in the project, as well as for each individual subproject under output 2. The overall financial internal rate of return was 16.9%, which exceeds the weighted average cost of

capital of 6.6%. The financial internal rate of return for the individual subprojects ranges from 11.4% to 24.9% versus the respective weighted average cost of capital, which ranges from 4.2% to 7.7%. Sensitivity analysis confirmed the project's robustness in response to increases in investment costs, but sensitivity to revenue reduction and operation and maintenance cost increases. On the basis of their financial statements, the financial performance of each of the PPEs was found to be acceptable in terms of liquidity, profitability, capital structure, and debt management.

C. Governance

24. The executing and implementing agencies were trained on procurement and financial management during project preparation. The implementing agencies will be assisted by procurement agencies authorized by the national government. Further training on procurement will be provided to the executing and implementing agencies, with a focus on practical aspects. The financial management assessment confirmed HPG's sufficient capacity, while most PPEs meet only the minimum requirements. HPG will ensure that (i) additional training on ADB's disbursement procedures is provided, and (ii) every PPE assigns adequate finance staff to manage its project account. Due diligence on corporate governance of PPEs was conducted for anticorruption and integrity during the project preparation. ADB's Anticorruption Policy (1998, as amended to date) was explained to the national government and HPG. The specific policy requirements and supplementary measures are described in the PAM (footnote 18).

D. Poverty and Social

25. Improved food safety will benefit millions of people in the PRC, as well as consumers overseas. The project will benefit the livelihoods of 12,000 households in nine counties in Henan Province through employment generation from PPEs' value chains (e.g., for suppliers of young stock, and fodder and feed crops). Among those beneficiaries, 1,400 employees (40% of which are female), will be hired directly by the PPEs. About half of those beneficiaries are expected from poor and vulnerable households. The project is designated as effective gender mainstreaming, anticipating to benefit about 10,800 women through involvement in on-farm activities and off-farm waged employment opportunities provided by the increased production and processing of the PPEs. There will be little impact on smallholder livestock producers, because the PPE target markets do not overlap with local markets where smallholders sell their livestock and meat products. The project assumes a supply shortage of livestock and its products exists at the local and national levels; hence, the project activities will neither crowd out smallholder livestock producers nor widen income inequality.

E. Safeguards

26. **Environment.** The project is classified as category B for environment. An initial environmental examination (IEE), including an environmental management plan (EMP) was prepared according to the requirements of ADB's Safeguard Policy Statement (SPS, 2009). The IEE is consistent with the domestic environmental assessment reports for the PPEs. Consultations involved key stakeholders, including local communities and government agencies in the nine project counties, and the outcomes are integrated in the project design. HPG, through the PMO, will be responsible for implementation of and compliance with the EMP, including inspection, monitoring, reporting, and initiating corrective actions or measures. The PMO will implement and have final responsibility for a grievance redress mechanism to handle disputes. The PPEs will be responsible for site-based implementation of the EMP and grievance redress mechanism. The IEE was disclosed on the ADB website on 4 August 2015.

27. Environmental benefits will be achieved through (i) improved management and recycling of livestock solid waste and wastewater, (ii) increased efficiency of water and energy use, (iii) strengthened compliance with water resource regulations, (iv) improved health and safety of workers and consumers of livestock products, (v) improved monitoring of environmental resource use, and (vi) reduced greenhouse gas emissions due to the inclusion of biogas generators in project design. Potential project impacts include (i) overextraction of groundwater, (ii) soil and groundwater pollution from inadequate waste disposal, (iii) operational odor and noise, and (iv) localized and temporary construction impacts. Measures to address these include (i) strict compliance with groundwater extraction permits, (ii) long-term monitoring of groundwater extraction and energy use, (iii) water-saving measures incorporated in project design and operations, (iv) reuse of treated wastewater and biogas slurry, (v) waste containment measures, (vi) recycling of solid waste to organic fertilizer, (vii) 500-meter buffer zones to offset noise and odor, and (viii) construction-mitigation measures. The PPEs' capacity to implement the EMP was assessed and requires strengthening. A capacity development program that includes EMP implementation is part of the project design. Full implementation of the EMP, together with training, is expected to result in minor residual impacts that are within the limits of the PRC standards defined in the EMP.

28. **Involuntary resettlement and indigenous peoples.** The project is classified as category B for involuntary resettlement and category C for indigenous peoples. A resettlement plan has been prepared for the resettlement of three households for the Henan Sangao Agriculture and Animal Husbandry Co., Ltd.²¹ Those households need to be physically relocated as required by the PRC environmental regulations because they are situated within 500 meters of the agroprocessing plant of one of the PPEs. The households will retain access to the land on which their existing houses are located. Negotiated settlements in the form of land lease contracts for the PPEs' project sites were reviewed and revised to ensure compliance with the relevant national regulations and SPS. For house demolition impacts, these three households preferred cash compensation. A due diligence report was prepared on all land leases under the project.²² The leases cover a total area of 215.6 hectares and involve at least 548 farming households. Some of the subproject land is state-owned land directly leased by the national government to the PPEs or their parent companies; some is collectively owned land assigned to rural households that have subleased their allocated land to the PPEs. Most of the subleases provide clear standards for determining or adjusting rent over the term of the project. In some cases, the term of the sublease extends beyond the term of the current household's use right. Due diligence was conducted that confirmed these agreements were voluntarily signed by the participating households after they were fully informed and consulted. Implementation of the resettlement plan and land lease agreements will be monitored and reported. The failure of negotiated settlement (leasing) would not result in expropriation, and therefore the involuntary resettlement safeguard provisions of SPS are not triggered.

F. Risks and Mitigating Measures

29. The overall project risk rating is moderate. The integrated project benefits and impacts are expected to outweigh the costs. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.²³

²¹ Resettlement Plan (accessible from the list of linked documents in Appendix 2).

²² Due Diligence Report on Land Lease Contracts (accessible from the list of linked documents in Appendix 2).

²³ Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigating Measures
Project implementation by PPEs is hampered due to poor financial performance caused by adverse market situations, animal diseases, and/or difficulty maintaining land lease contracts.	<p>The executing agency will monitor the PPEs' financial situation to ensure timely remedial measures are taken if needed. ADB and the executing agency will carefully monitor and assess the financial position of the PPEs during the midterm review.</p> <p>For animal diseases: The project will provide the PPEs with training on prevention and handling of animal diseases, including improved management to minimize risk (herd health, use of veterinary drugs and welfare) and proper handling procedures in case of a disease event (biosecurity). The executing agency will monitor PPE animal disease prevention to minimize such risks.</p> <p>For land lease contracts: The executing agency will monitor execution of land contract agreements between the PPEs and village collectives. Price adjustment mechanisms were incorporated in some leases. The lease terms extend beyond the term of the current household's use right (currently 13–15 years from 2014), and it is not clear as a matter of the law of the People's Republic of China that these leases will continue or be unilaterally renewable by the relevant PPEs from that point. Managing their land use rights may be a continuing operational issue for some of the PPEs, and is beyond their control.</p>
Unsustainable extraction of groundwater for PPE operations	<p>(i) Water use by the PPEs will be measured throughout the life of operations as part of a sustainability monitoring program developed for the project. (ii) Water meters will be installed by the PPEs to measure all water use. (iii) Extraction permits issued to all PPEs will be strictly complied with. (iv) The project management office, the PPEs, and water resource bureaus will annually review extraction volumes and permits. (v) Water-saving measures will be integrated in project design and operations. (vi) Use of raw water will be reduced because the PPE wastewater will be treated and reused on crops around the PPEs.</p>

ADB = Asian Development Bank, PPE = project participating enterprise.

Source: Asian Development Bank.

IV. ASSURANCES

30. The national government and HPG have assured ADB that implementation of the project shall conform to all applicable ADB policies, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the PAM and loan documents (footnote 18).

31. The national government and HPG have agreed with ADB on certain covenants for the project, which are set forth in the draft loan and project agreements.

V. RECOMMENDATION

32. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of \$69,000,000 to the People's Republic of China for the Henan Sustainable Livestock Farming and Product Safety Demonstration Project, from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 15 years, including a grace period of 5 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board.

Takehiko Nakao
President

7 September 2015

DESIGN AND MONITORING FRAMEWORK

Impacts the Project is Aligned with:

- (i) Agricultural industrialization and large-scale operation upgraded,
- (ii) Capacity in ensuring agro-product quality and safety enhanced, and
- (iii) Conservation of agricultural resources and ecosystems strengthened.

(National Modern Agriculture Development Plan, 2011–2015^a)

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Model livestock production and processing with improved environmental sustainability and product safety demonstrated	By 2020: a. A livestock product safety monitoring and inspection system established and operational at HAHB, five MAHBs, nine CAHBs, and nine PPEs (2015 baseline: 0) b. 130,000 pigs/year raised at PPE project facilities (2015 baseline: 0) c. 42,000 cattle/year raised at PPE project facilities (2015 baseline: 0) d. 450,000 poultry/year bred at PPE project facilities (2015 baseline: 0) e. 45,000 tons/year of meat produced at PPE project facilities (2015 baseline: 0) f. 56,000 tons/year of organic fertilizer produced at PPE project facilities (2015 baseline: 0) g. More than 1,000 tCO ₂ e/year of greenhouse gas emission from biogas plant operation avoided (2015 baseline: 0)	a–g. Project progress reports and environmental safeguard monitoring reports	Project implementation by PPEs is hampered due to poor financial performance, adverse market situations, animal diseases, and/or difficulty maintaining land lease contracts.
Outputs 1. Livestock product safety monitoring and inspection facilities upgraded	1a. HAHB laboratory increased sample testing to 30,000 batches/year by 2020 (2015 baseline: 20,000 batches/year) 1b. Five MAHB laboratories CMA- and CATL-certified by 2020 (2015 baseline: 1 MAHB laboratory) 1c. Nine CAHBs equipped with laboratories by 2020 (2015 baseline: 1 CAHB) 1d. Nine PPEs established, with well-equipped in-house testing facilities for feed and livestock products by 2020 (2015 baseline: 0) 1e. HAHB, five MAHBs, nine CAHBs, and nine PPEs equipped with computer systems to support livestock product safety monitoring and inspection system by 2020 (2015 baseline: 0)	1a. HAHB annual reports 1b. CMA and CATL certificates 1c–e. Project progress reports	Exclusion of relevant personnel from training causes inefficient use of facilities and equipment provided by the project. Limited financial management capacity of the PPEs causes delays in withdrawing the ADB loan proceeds, resulting in delays in disbursement and project implementation.

Project Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
2. Environmentally sustainable livestock production facilities established	2a. All livestock and processing wastes from PPE project facilities treated from the start of operation by 2020 (2015 baseline: 0) 2b. All wastewater produced from PPE project facilities meets the appropriate People's Republic of China standards by the start of their operation, by 2020 (2015 baseline: 0) 2c. Water use per unit of livestock is 20% less than the existing PPE facilities of the same livestock type (2015 baseline: 0%) 2d. 1,400 additional employment opportunities, (minimum of 560 or 40% for women), generated by the PPEs by 2020 (2015 baseline: 0, at least 0% for women)	2a–d. Project progress reports and environmental safeguard monitoring reports	Declined profitability reduces PPE interest in operating waste and wastewater treatment plants. Limited financial management capacity of the PPEs causes delays in withdrawing the ADB loan proceeds, resulting in delays in disbursement and project implementation.
3. Capacity and project management strengthened	3a. At least 2,000 person-days of training on project management conducted for relevant government officials and PPE personnel, of which at least 30% are female, by 2020 (2015 baseline: 0, at least 0% female) 3b. At least 8,000 person-days of training on food safety and sustainable livestock production conducted for relevant government officials and PPE personnel, of which at least 30% are female, by 2020 (2015 baseline: 0, at least 0% female) 3c. Nine PPEs (for livestock-rearing segment) certified for ISO 9001 and/or the China Good Agricultural Practices (2015 baseline: 4 PPEs) 3d. Five PPEs (for livestock-processing segment) certified for hazard analysis and critical control point and/or ISO 22000 (2015 baseline: 3 PPEs)	3a–d. Project progress reports	
Key Activities with Milestones			
<p>1. Livestock product safety monitoring and inspection facilities upgraded</p> 1.1 Upgrade HAHB's laboratory and install testing equipment (Q2 2016–Q1 2019). 1.2 Upgrade five MAHB laboratories and install testing equipment (Q2 2016–Q1 2019). 1.3 Procure information technology equipment and software to establish a laboratory information management system (Q2 2016–Q1 2019). 1.4 Upgrade or establish nine CAHB laboratories and install testing equipment (Q2 2016–Q1 2020). 1.5 Upgrade or establish nine PPE in-house testing facilities (Q2 2016–Q1 2020).			
<p>2. Environmentally sustainable livestock production facilities established</p> 2.1 Establish production and processing facilities (Q2 2016–Q1 2020). 2.2 Establish feed processing facilities (Q2 2016–Q1 2020).			

Key Activities with Milestones	
2.3 Establish biogas digesters (Q2 2016–Q1 2020).	
2.4 Establish organic fertilizer processing facilities (Q2 2016–Q1 2020).	
3. Capacity and project management strengthened	
3.1 Recruit project implementation consultants (Q2 2016).	
3.2 Conduct training on project management (Q2 2016–Q4 2020).	
3.3 Conduct training on product quality and safety control (Q2 2016–Q4 2020).	
3.4 Conduct training on sustainable livestock production and processing (Q2 2016–Q4 2020).	
3.5 Establish project performance management system, monitor project implementation progress, and submit quarterly project progress reports to ADB (Q2 2016–Q3 2021).	
3.6 Implement the environmental management plan, and submit semiannual environmental safeguard monitoring reports to ADB (Q2 2016–Q3 2021).	
3.7 Implement the resettlement plan and gender action plan, and submit semiannual social safeguard monitoring reports to ADB (Q2 2016–Q3 2021).	
Inputs	
ADB loan:	\$69,000,000
Henan Provincial Government:	\$ 3,840,000
PPEs:	\$75,860,000
Assumptions for Partner Financing	
Not applicable.	

ADB = Asian Development Bank, CAHB = county animal husbandry bureau, CATL = China Agri-Product Testing Laboratory, CMA = China Metrology Accreditation, HAHB = Henan Animal Husbandry Bureau, ISO = International Organization for Standardization, MAHB = municipal animal husbandry bureau, PPE = project participating enterprise, Q = quarter, tCO₂e = ton of carbon dioxide equivalent.

^a Government of the People's Republic of China, Ministry of Agriculture. 2013. *National Modern Agriculture Development Plan, 2011–2015*. Beijing.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

<http://adb.org/Documents/RRPs/?id=46081-002-3>

1. Loan Agreement
2. Project Agreement
3. Sector Assessment (Summary): Agriculture, Natural Resources, and Rural Development
4. Project Administration Manual
5. Contribution to the ADB Results Framework
6. Development Coordination
7. Economic Analysis
8. Financial Analysis
9. Country Economic Indicators
10. Summary Poverty Reduction and Social Strategy
11. Gender Action Plan
12. Initial Environmental Examination
13. Resettlement Plan
14. Risk Assessment and Risk Management Plan

Supplementary Documents

15. Due Diligence Report on Land Lease Contracts
16. Financial Management Assessment
17. Procurement Capacity Assessment
18. Technical Report on Livestock Product Quality and Safety Monitoring and Inspection
19. Technical Report on Environmentally Sustainable Livestock Production and Processing