



**The World Bank**

HUBEI SAFE, SUSTAINABLE, SMART AGRICULTURE PROJECT (P168061)

---

## Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

---

Appraisal Stage | Date Prepared/Updated: 10-Jan-2020 | Report No: PIDISDSA27997



## BASIC INFORMATION

### A. Basic Project Data

Country China	Project ID P168061	Project Name HUBEI SAFE, SUSTAINABLE, SMART AGRICULTURE PROJECT	Parent Project ID (if any)
Region EAST ASIA AND PACIFIC	Estimated Appraisal Date 09-Dec-2019	Estimated Board Date 24-Mar-2020	Practice Area (Lead) Agriculture and Food
Financing Instrument Investment Project Financing	Borrower(s) People's Republic of China	Implementing Agency Hubei Provincial Department of Agriculture and Rural Affairs	

#### Proposed Development Objective(s)

The PDO is to promote integrated food safety, environmental sustainability, and climate-smart agriculture in targeted agri-food value chains and landscapes in Hubei Province.

#### Components

Agricultural Risk Assessment, Management, and Communications  
Demonstration and Replication of Safe and Sustainable Agricultural Practices  
Project and Knowledge Management

## PROJECT FINANCING DATA (US\$, Millions)

### SUMMARY

Total Project Cost	297.66
Total Financing	297.66
of which IBRD/IDA	100.00
Financing Gap	0.00

### DETAILS

#### World Bank Group Financing



International Bank for Reconstruction and Development (IBRD)	100.00
<b>Non-World Bank Group Financing</b>	
Counterpart Funding	191.38
Borrower/Recipient	191.38
Trust Funds	6.28
Global Environment Facility (GEF)	6.28

Environmental Assessment Category

B-Partial Assessment

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

## B. Introduction and Context

Country Context

1. Over recent decades, China has been highly successful in developing an agricultural sector that has ensured the food security of its population. Agricultural production in China has grown by nearly 5 percent per year since the late 1970s, a remarkable achievement. China's agricultural total factor productivity (TFP) growth of 2-3.5 percent per year since the start of the reforms has been one of the highest in the world. This TFP growth has stemmed from technological innovation, together with economic and institutional reforms. The volume of crop and livestock production has steadily increased between 1993 and 2013, rising by 13 and 39 percent, respectively. Significant and sustained agricultural growth has helped to lift hundreds of millions of people out of poverty, and reduced hunger by over 70 percent—more than any other country in the world.

2. The country's food system and the underlying policies have undergone transformation from an emphasis on producing more and cheaper food to supplying higher quality and safer food. The Chinese food industry has passed through three key stages until today, namely—the “food security”, “better quality food”, and “healthy food” stages.<sup>1</sup> Before the turn of the century, the leading role of the Chinese food industry was to support farmers in adding value to agricultural products. Its role has then changed to satisfying consumers desire for higher quality food and recently to supplying safe, nutritious and healthy food. During these stages, advances in innovation in food technology have enabled more food products to be offered that can last longer and be produced more cheaply. This carries both benefits and risks. While it positively contributes to having adequate

<sup>1</sup> Jen & Chen. 2017. Food Safety in China: Science, Technology, Management and Regulation.



food supply to feed the country's large population, it also brings associated environmental and food safety and quality risks. For a country such as China, with its level of population and complex domestic food supply chains, food safety is an issue that spans all levels of government and food supply chains, from farm to table.

3. China has also moved more aggressively towards animal food production, which is an environmentally intensive agricultural system. For example, the share of meat in agricultural production increased from 29 to 39 percent between 1980 and 2010. China's livestock overhead count tripled between 1980 and 2010. In the same period, there was a 70-fold increase in the size of livestock in landless industrial systems while monogastric livestock (such as pork and boilers) increased by 269 percent (from 88 to 325 million). China is now the world's largest producer of cereals, meat, and vegetables. In doing so, China has not only ensured food security of its households it has also increased farm incomes of rural households.

4. This remarkable agriculture development has, however, been achieved at the expense of unsustainable use of natural resources. The intensive use of natural resources and chemical inputs has increased environmental and ecological fragility, worsened land degradation, proliferated food safety risks, and increased carbon footprint from agriculture. The sector is also characterized by the dominance of small-scale farming, which led to inefficient use of chemical inputs. Today, China has one of the highest fertilizer application rates, with an average of 400 kg per hectare. The current per hectare use of pesticides in China is twice the world average. Three quarter of the nitrogen nutrient runs off into water sources or enters the air, with polluting effects. The release of animal manure and waste water from intensive livestock sector has also created serious environmental stress, especially on water quality.

5. Cognizant of these challenges, the government of China is undertaking several agri-food policy reforms to make the sector more ecologically friendly, environmentally sustainable, and climatically smart. The 2014 No. 1 Document was the first to propose establishing a long-term framework of sustainable agricultural development. This was a reform from a sole reliance on food security and farm incomes towards environmental sustainability. The framework included developing eco-friendly agriculture through implementation of pilot projects of temporary resource and strengthening ecological protection. In 2015, the State Council authorized the Ministry of Agriculture and Rural Affairs (MARA) and other government agencies to issue the Agricultural Sustainable Development Plan (2015-2030), which sets the goals and paths of sustainable agricultural development.<sup>2</sup> In the same year, MARA issued the Action Plan for Zero Growth of Chemical Fertilizer Use by 2020 and the Action Plan for Zero Growth of Pesticide Use by 2020, which was the first effort to seriously curb fertilizers and pesticide overuse. Subsequently MARA issued the 2017 Notice of Five Actions for Green Development of Agriculture; these include improving management of livestock manure, replacing chemical fertilizers with organic fertilizers, encouraging straw treatment, recycling agricultural plastic, and the action of aquatic biodiversity protection. China has undertaken several changes in its domestic support and productivity policies and promoted green agriculture (including through green financing). China also passed two national laws (in 2006 and 2009) to regulate food safety risk assessment, which are key in facilitating systematic food risk assessment activities throughout the country. Agricultural product quality and food safety standards (such as green and organic food labeling) are widely believed to contribute to green agriculture.

6. China has committed to an ambitious plan to address climate change risk. The Nationally Determined Contributions (NDCs) of China submitted to the UN Framework Convention on Climate Change (UNFCCC) in 2015 committed to reducing greenhouse gas (GHG) emissions per unit of GDP by 60 to 65 percent from the 2005

<sup>2</sup> China Ministry of Agriculture and Rural Affairs (2015).



level, to proactively adapting to climate change in agriculture, and to strengthening early warning and emergency response systems. The potential of climate smart agriculture (CSA) to reduce emissions, improve soil productivity, promote adaptation, and improve the resilience of the agriculture sector to growing climate change risk has been acknowledged at national and provincial levels. Recognizing the importance of market mechanisms to address the climate change risk, in 2011 China's National Development and Reform Commission (NDRC) initiated a carbon emissions trading pilot that identified seven regional emissions trading pilots. The regional emission trading scheme (ETS) pilots, which began in 2014-15 and which also included Hubei Province, helped to generate early experience of addressing GHG emissions through a market mechanism. Based on these experiences, the Third Plenary of the 18th CPC Central Committee recommended establishment of a national carbon market to scale up GHG mitigation actions, and the 13th Five-Year Plan prioritized development of a national ETS, with an expectation to operationalize it during 2020.

#### Sectoral and Institutional Context

7. Addressing the current challenges facing China's agri-food system and positioning the sector to continue to excel into the middle of the century requires working with the government, farmers and the private sector to promote a new approach to agricultural development based on "The New 3 Ss": Safe, Sustainable, and Smart (as in climate-smart). This approach recognizes that food safety, environmental sustainability, and being climate-smart are all related, and that they should be addressed in an integrated and complementary way. For example, on its current path, climate change is expected to exacerbate food safety risks in China. Changing weather patterns could increase pathogen prevalence in agriculture and affect pest distribution, while extreme events like heavy rainfall and flooding can increase the infection risk from pathogens and make plants more susceptible to mycotoxins. By investing in resilience-building measures and cutting emissions, China can reduce food safety risks. As another example, limiting the use of chemical inputs in Chinese agriculture can reduce water pollution, cut GHGs, improve soil structure, and minimize harmful residues on crops.

8. Located in the middle branch of the Yangtze River, with the fertile Yangtze-Han River Plain, Hubei is one of China's leading agricultural producers. Hubei is in the subtropical region where the monsoon prevails. Apart from the mountainous area, Hubei is characterized with wet climate, long period free of frost, and rich precipitation. The provincial annual temperature averages 15-17°C, with its coldest days in January (2-4°C) and the hottest days in July ( 27-29 °C). Hubei gets annual precipitation between 800-1600 mm, with the highest rainfall occurring between June and July. With this climatic conditions, Hubei ranks in the top five provinces for rice, tea, vegetables, freshwater aquaculture, and oilseed production in China. Agriculture (including cropping, forestry, animal husbandry and fisheries) accounts for a fifth of the total provincial GDP and provides livelihoods or employment for some 15 percent of the province's population. Hubei is home for 59 million people, covering a total land area of 185,900 km<sup>2</sup>. Hubei is the 7<sup>th</sup> largest provincial economy with a GDP of RMB 3.94 trillion in 2018 (about USD 570 billion), with a per capita GDP of RMB 69,000 (USD 10,000). The added value coming from agriculture, forestry, animal husbandry, and fishery is about RMB 373.36 billion (USD 54 Billion).

9. Hubei has ambitious goals for agricultural development. As articulated in the provincial 13<sup>th</sup> five Year Plan and in the 2018-2020 Specialty Agricultural Produce Development Plan, the Hubei province aspires to take advantage of an unmet national demand for safe and high-quality food products from an increasingly urbanizing consumer base. In 2015, Hubei promoted the application of soil testing and formula fertilization for an area of 6.6 million hectare; the proportion of households with clean energy reached 41.5 percent; and nearly half of the households were practicing a standardized farming. The Province aims to become a national leader in agricultural sustainability, food safety, and climate change mitigation and adaptation. Hubei has the potential



to become one of China's top producers of "cleaner and greener" food, by differentiating itself through the production and environmental practices applied, the quality of its products, and the integrity of its institutional arrangements for food governance.

10. Hubei's agriculture has a significant environmental footprint in the province as well as in the country. With over 650 large scale pig farms that have above 10,000 pigs—ranking first in the country—Hubei contributes a sizable share to the nation's emissions. In 2015, the COD from agriculture sources in Hubei was 448,100 tons and that of ammonia nitrogen was 43,800 tons. Hubei's average fertilizer application rate of 26.8 kg/mu is 4.9 kg more than the national average.<sup>3</sup> The province's straw production totaled 38 million tons, but more than 20 percent was wasted. For livestock manure, the utilization rate is less than 50 percent. Together, these represent important opportunities for circular agriculture that have not been realized. The Yangtze River, which flows through Hubei, is also the biggest carrier of plastic pollution to the ocean in the world. Measurements of plastic pollution loads taken in the Yangtze River in Hubei are the highest ever recorded. Food packaging and plastic mulch from agriculture are important sources of this pollution. The high levels of agricultural and rural environmental pollution in Hubei have directly affected the quality and safety of agri-food products.

11. Addressing environmental challenges has become a priority for the Chinese government. Policies and national development strategies on eco-civilization and green growth were highlights of the keynote speech delivered by China's President Xi Jinping at the 19th Communist Party Congress held in October 2017, and the 2018 No. 1 Central Document. The National Sustainable Agricultural Development Plan adopted by the MARA in 2016 includes commitments to treat or utilize 90 percent of animal waste by 2030, to utilize all crop straw by the same year, to increase nitrogen fertilizer efficiency by 40 percent by 2020, and to equip 75 percent of all irrigated farmland with water saving technologies by 2030. China is also increasingly playing a global leadership role on these issues. Under the Paris Climate Agreement, China committed "to promote the low-carbon development in agriculture."

12. In the meantime, China's increasingly affluent, sophisticated, and urban consumers are demanding safer, healthier, and greener food. The over-use of agro-chemicals such as pesticides, herbicides, and fertilizers has contributed to soil degradation and contamination of large areas. One sixth of arable land in China suffers from soil pollution, 22 million acres of farmland are contaminated with pesticides, and 13 million tons of crops are contaminated with heavy metals each year (Chinese Ministry of Environmental Protection). The situation has likely led to serious, long-term, adverse health impacts for farmers as well as consumers. A series of scandals related to contaminated or adulterated crop, livestock, and processed food products has received widespread attention in the news and social media. This has caused great concern among Chinese consumers, leading them to seek out products with increasingly higher levels of certification and traceability, or to opt for imports.

13. The gender gap in China has narrowed for some specific indicators such as maternal mortality, but the gap remains high for key economic and decision-making criteria. Gender gaps are especially prevalent in the agriculture sector that employs about 40 percent of the country's women, compared to less than 30 percent of men. Women generally outnumber men in workplaces where exposure to toxic chemicals is most common—intensive agricultural production systems, such as pig farming and agro-processing industries. More women are thus exposed to environmental hazards and emissions from the agriculture sector. Women farmers are also often the least likely to be aware of the environmental dangers in their workplace. Studies also show that gender is the single most important determining factor for income disparities in China. On average, Chinese women

<sup>3</sup> A hectare is 15 mu.



earn just 64 percent of their male counterparts.<sup>4</sup> This gender gap in income earnings is even wider in the central part of the country, which includes Hubei, and for those in rural areas, where men earn nearly twice that of women. International studies have also found that women find the typical information and communications technology (ICT) in agriculture much less useful than do other demographic groups.

14. Food safety risks can have disproportionately negative impacts on women, because women have significant responsibility for processing and preparing food, which increases their exposure to food-related diseases and pollutants compared to men. When food is not perceived as safe, there are also consequences on women's health. Anemia during pregnancy is a major public health issue in China. In the absence of safe protein foods, pregnant women from all income categories still tend to rely more on safer but less nutritious staple foods. Food safety risks (such as food borne diseases) also reduce women's labor productivity, thereby worsening income gaps. Women are also generally the principal decision makers in the dietary choice of household members and hence affect the type of food purchased from the market. This makes them both victims of and responsible for food safety incidents.

15. Hubei Province recognizes these food safety, environmental, and climate challenges. In a project proposal submitted to national authorities and the World Bank, the Hubei provincial government requested the Bank's assistance in addressing the challenges it faces with potential contamination of agri-food products, and the lack of traceability systems and consistent standards. Many of the challenges described in the proposal derive not from microbial contamination due to improper handling, processing and storage of food products, but from the unsustainable production problems plaguing the sector more generally. For example, Hubei ranks third in the nation in fertilizer use. A review of soil sample surveys found that 20-30 percent of Hubei agricultural land is contaminated with heavy metals, ranking near the top of provinces with the highest such incidence. While industrial pollution is a leading source of heavy metal contamination of soil and water, the overuse of pesticides is also a contributor. An estimated one million square kilometers of farmland have experienced soil contamination, including excessive levels heavy metals, due to pesticide overuse. Heavy use of pesticides has been especially common in rice, vegetable, and tea production. Meanwhile, climate change is projected to have significant medium to long-term adverse effects on the agriculture sector in Hubei. The potential impacts could include damage to crops and livestock caused by high summer temperatures and spring freezes; accelerated decomposition of organic elements in the soil; increased areas affected by crop pests and diseases; and increased risk of livestock epidemics, all contributing to reduced crop and livestock production.

16. There are important institutional constraints on Hubei's ability to implement the new agenda. In China in general and Hubei in particular, tremendous amounts of public resources are provided to the agriculture sector. However, not all of these public supports are targeted to addressing the food safety, environmental, or climate challenges—indeed, some of them may even contribute to the problem. Hubei's total ag-sector transfer payments were approximately RMB15.5 billion (US\$2.2 billion) in 2018, covering a plethora of programs. But currently, the lack of knowledge and monitoring capacity, and poorly designed subsidy schemes, create perverse incentives along agri-food value chains, leading to contaminated food, environmental degradation, and high greenhouse gas emissions, and delaying the necessary transition to a 3Ss agri-food system. There is ample opportunity to provide evidence and technical assistance to the provincial government to help them make domestic agricultural support greener and more targeted towards public good provision.

<sup>4</sup> Inequality of Opportunity in China's Labor Earnings: The Gender Dimension, *China & World Economy*, 2019



17. Hubei Province has also demonstrated leadership in addressing climate change risk through market mechanisms by establishing a regional pilot emissions trading scheme (ETS) in April 2014 to address industrial emissions from power generation, cement, chemicals, metallurgy, manufacturing, and food and beverage industries, and enabled trading of emissions allowances. The allowances were traded in a range of CNY 10 to 30/ton CO<sub>2</sub>e with an average price of CNY 22/ton CO<sub>2</sub>e. The Hubei ETS allows companies in the covered industries to use voluntary offset projects that are verified as China Certified Emissions Reductions (CCERs) to cover up to 10 percent of their targets. In the pilot phase, CCER projects from renewable energy and forest carbon sinks were allowed. However, offsets from agriculture were not allowed. As the ETS is scaled up, establishing the preconditions for the inclusion of CSA investments as a candidate for offsets would create powerful incentives provided by the private sector. Development of offsets based on mitigation actions resulting from climate smart agriculture interventions reduces the cost of compliance for companies, thereby creating incentives to invest in CSA interventions as cost-effective options to meet emissions reduction targets and address climate change risk. An innovation of the project is to support development of methodologies, monitoring and institutional framework for generation of agricultural carbon offsets that are eligible to trade in the emissions trading scheme.

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

##### Development Objective(s) (From PAD)

The PDO is to promote integrated food safety, environmental sustainability, and climate-smart agriculture in targeted agri-food value chains and landscapes in Hubei Province.

##### Key Results

- a. Food Safety: Reduced pesticide and veterinary drug residue levels in the select value chains (percent)
- b. Sustainability and Resilience: Area under 3S Good Agricultural Practices (GAP) (area of landscapes under improved practices) (hectares);
- c. Climate Smart Agriculture: Greenhouse gas (GHG) emissions from agriculture mitigated (CO<sub>2</sub> metric tons equivalent);

#### D. Project Description

18. The project design is organized around three distinct elements: (i) the systems for detecting and monitoring agro-environmental hazards and food safety risks; (ii) demonstration and scaling up of applications of improved farming practices and other investments which impact product quality, environmental sustainability, and climate-smartness in selected value chains; and (iii) effective project monitoring, oversight, and knowledge management. Accordingly, the project will have the following three components to support activities and investments contributing to the above PDO.

##### ***Component 1: Agricultural Risk Assessment, Management, and Communications***

19. This component centers on the development of safe, sustainable, and climate-smart production and processing standards, the strengthening of the evidence base for improved environmental, climatic, and food safety risk management, the strengthening of institutional capacity for developing and effectively utilizing this evidence base, the promotion of market-oriented incentive mechanisms, and the development of an improved



dialogue with consumers regarding food safety hazards and risks. The component will be implemented at the provincial level, and will support public goods and services that make the most sense at the provincial—rather than the county—level, including incremental environmental investments.

20. *Subcomponent 1.1: Risk Assessment.* The project will strengthen Hubei's agriculture and food risk assessment system by remodeling the risk assessment framework, upgrading institutional capacities and developing standards for risk assessments. The project will finance:

- (i) **food safety risk assessments:** regular and periodic assessment of quality and food safety risks in selected value chains; setting up of Hubei specific quality and safety standards; strengthening quality and food safety risk surveillance techniques and procedures; upgrading laboratory capacity and accreditation of laboratories and redefining investigative capacity with a greater hierarchy of laboratory capabilities (reference labs, regional labs and town level surveillance stations); and risk monitoring and evaluation systems.
- (ii) **agro-environmental risk assessments:** spatial mapping of Hubei's agricultural soils and water resources for the incidence and severity of heavy metals and plastics pollution; mapping of existing soil, water, and agro-biodiversity resources, and assessment of resource degradation risks; improving agro-environmental detection and early warning systems for climate hazards, crop disease and pest surveillance, while leveraging remote sensing and high resolution real-time weather data surveillance.
- (iii) **climate risk assessments:** conducting studies to assess current and future climate change impacts on major agricultural value chains; the development of methodologies for monitoring agricultural GHG emissions and other pollutants and the establishment of baseline data, and the development of capacity to model climate change impacts on local agriculture, and improve agro-environmental early warning systems. The specific investments include instrument upgrades, software development, technical assistance and trainings.

21. *Subcomponent 1.2: Risk Management.* The project will support

- (i) **standards development:** development of Hubei provincial 3S GAP standards, policies, protocols and capacity building to mainstream food safety, and sustainable and climate-smart agriculture for key value chains. This could include the financing of applied research where Hubei-specific information is currently lacking. In so doing, the project will harmonize the standards issued under the Law on Quality and Safety of Agriculture Products and China Food Safety Law and adapt global standards such as GAP/HACCP/Codex, including pesticide safety interval period, hazard residue limit and risk sampling protocols;
- (ii) **big-data analytics and provincial traceability platform:** develop integrated IT platforms with big-data capabilities, including business intelligence, analytics, and data visualization, and build reporting tools to facilitate reporting for official reasons and to inform consumers. It will also create provincial/county traceability platforms linking up with enterprise/production base level food quality and safety traceability systems along the value chain;



- (iii) **institutional systems:** development of provincial level food collaboration mechanisms; incremental investments and capacity building to improve ecological services, such as the establishment of a provincial level integrated landscape management mechanism, agricultural landscape planning and the development of actionable plans and policies to improve agricultural landscapes, agricultural biodiversity and land restoration, and reduce pollution from fertilizers, pesticides, and plastics; establishment of monitoring systems to assess the implementation of mitigation actions targeting GHG emissions and land degradation; agricultural quality standards, monitoring and inspection; and regulatory systems; and
- (iv) **incentives:** in relation to the carbon offset protocol and carbon market mechanism for major agricultural value chains, the project proposes to operationalize the *Action Plan for Establishment of Market Based and Ecological Conservation Compensation Mechanisms* communicated by the central government to provincial governments in January 2019 to promote voluntary carbon offsets to harness ecological and economic benefits, attract private sector investment, and enable markets to play a catalytic role in climate change mitigation and ecological conservation. In this context, the project will assist the Hubei provincial government to (a) develop a policy and institutional framework in support of agricultural carbon offsets eligible for trade in the post-2020 emission trading scheme, including by establishing protocols for GHG monitoring, reporting and verification (MRV) in agriculture, both above and below-ground; and to (b) develop capacity to generate carbon offsets and promote market mechanism through technical support and training.

22. *Subcomponent 1.3: Risk Communications.* This sub-component aims to increase public confidence in the food industry through establishment of a Public Participation in Risk Communication and Science Popularization program. Interventions would support communication capacity building of stakeholders across the value chain. It will encourage a dialogue between partners, strengthening understanding of the issues, of the accountability of producers and regulatory authorities, and of the roles and responsibilities of consumers in ensuring the safety of food. The sub-component will also support improved public communications on agricultural landscape planning, agro-biodiversity, ecological protection, plastic pollution in the agri-food system, and CSA, including effective communications of early warning information and responses for climate hazards to farmers.

23. *Under this component, the GEF grant will support* public goods and services primarily at the provincial level to ensure that the knowledge, institutions, incentives, and capacity are in-place to allow for the mainstreaming of environmental sustainability in the future development of Hubei's agri-food system. GEF support would focus on: (i) incremental investments to benefit the global environment, such as development of methodologies and a system for monitoring GHG emissions from agriculture, establishment of the protocols for offsets under the ETS, reduced nutrient runoff into waterways, and reduced use of harmful pesticides; (ii) incremental environmental actions that make the most sense at the provincial—rather than county or enterprise—level, such as development of a Hubei Codes of Good Agricultural Practices for selected agricultural commodities, including paddy rice, tea, oranges, and pigs; (iii) incremental investments to improve ecological services, such as the establishment of a provincial-level integrated landscape management (ILM) mechanism, agricultural landscape planning and the development of actionable plans and policies to improve agricultural landscapes, agricultural biodiversity and land restoration; (iv) institutional capacity building on improving agricultural landscape planning and management, public communications on climate smart agriculture and ecological protection; and (v) monitoring and evaluation (M&E) on carbon sequestration above and below ground, GHG emissions reduction, and biodiversity.

**Component 2: Demonstration and Replication of Safe and Sustainable Agricultural Practices**

24. This component will support the demonstration of safe, sustainable, and climate-smart practices in the agri-food system, and the scaling-up of the adoption of these 3S practices to reduce the vulnerability of agriculture and its own adverse impacts on human health, the environment, and the climate. This would involve three sub-components, implemented across four counties of Hubei Province. The four counties represent upland and lowland landscapes with a diversity of agricultural production systems along the critical Yangtze River watershed—one of the most polluted and environmentally vulnerable in the world.

25. *Subcomponent 2.1: Demonstrations of Innovative Sustainable Production Practices.* This subcomponent supports investments in the productive infrastructure, equipment, and knowledge needed for a diverse range of schemes to demonstrate the GAPs and associated policies and monitoring methodologies developed under Component 1 for key Hubei agri-food value chains, including: rice, vegetables, tree crops (primarily tea and citrus), and livestock and aquaculture (and possibly others later if deemed appropriate). These value chains were selected due to a combination of factors, including their prominence in the Hubei agri-food system, and their relevance to the 3S challenges. The majority of the project financing will go to this sub-component. The investments will be implemented through farmer cooperatives, often in collaboration with agri-food enterprises.

26. Under this sub-component, the project will finance the implementation on the ground of GAPs and integrated landscape management plans with the potential to make positive contributions to all the 3Ss, and at a scale sufficient to provide proof of concept. Project activities under this subcomponent include safe food production and climate Smart Agriculture (CSA) practices that will promote carbon sequestration and emission reduction; reduce the use of fertilizers and pesticides to achieve high efficiency and low emissions; demonstrate water control; decrease non-point source pollution; reduce plastics pollution in the agri-food system and their runoff into waterways; and optimize the agricultural environment. Other activities to be financed include species selection technologies to increase productivity and biodiversity conservation, and decrease GHG emissions. The project will finance climate-smart and ecologically sound livestock production and management systems as well as livestock waste management and circular agriculture technologies. To this end, the GAPs financed by the project will contribute to the project objectives by:

- **Productivity enhancement:** Providing similar or even higher yields by improving agronomic practices such as conservation tillage improves soil structure, organic matter, and soil productivity (e.g. conservation tillage increases soil organic carbon of 1.0 to 4.0ton CO<sub>2</sub>e per hectare while increasing yields);
- **Resource use efficiency:** Lowering production costs through reduced inputs for energy, labor, machinery, fertilizers, water and pesticides;
- **Emissions reduction:** Mitigating CO<sub>2</sub> emissions through reduced fuel consumption and sequestration of atmospheric carbon into soil organic matter, and reducing N<sub>2</sub>O (e.g. improved fertilizer management is expected to reduce 0.5 to 2.0 ton of CO<sub>2</sub>e per hectare), and methane CH<sub>4</sub> emissions through an optimized use of nitrogen and improved soil drainage (e.g. alternate wetting and drying water management regime in rice reduces 20 to 40 percent methane emissions, improves 10 to 30 percent nitrogen fertilizer efficiency and results in 30 to 40 percent water savings);
- **Pollution reduction:** Promoting stress tolerant varieties/species, IPM, biopesticide use and reducing fertilizer consumption (use of controlled release fertilizer, deep application of fertilizer, fertigation systems), reduction of use of plastic films, use of biodegradable plastic mulch, livestock waste



management, etc,

- **Soil and water management:** Reducing runoff and erosion through better soil aggregate stability and improved water infiltration, and protective cover of the soil by crops and/or crop/pruning residues; diminishing off-site damage of infrastructures and pollution of water bodies through less runoff with a much-reduced sediment load;
- **Bio-diversity conservation:** Maintaining and promoting the diversity of rural landscape through enhanced crop and species diversity and cover crops; maintaining in-field and off-site biodiversity through the absence of destructive soil disturbance, protective soil shelter, and less off-site transport of contaminants;

27. The project will finance the cost of on-farm demonstrations of 3S technologies and practices, small scale productive infrastructure, agriculture machinery, small equipment and tools, inputs, value chain investments for improvements in processing, GAP/HACCP protocol compliance, digital agriculture devices and equipment (such as on farm sensors, precision controls, traceability systems, drones preferably with capabilities for smart monitoring and action), rapid testing devices and on-site laboratories product quality and food safety, digital reporting through GEMS (Geo-enabled Monitoring and Supervision) and monitoring and learning for systematic scaling up. A contingency provision in the form of *smart response fund* will also be provided in each pilot that allows project participants to be agile and smart in responding to extreme climate events, pest attacks, pollution incidents, food safety incidents, etc. Wherever appropriate and cost-effective, the project will promote the use of the latest ICT and digital innovations in the Hubei agri-food system.

28. *Subcomponent 2.2: Scaling-up Sustainable Production Practices.* The activities under this subcomponent will strengthen service delivery systems for the supply of safe and green agriculture inputs to farmers, provide additional support services, farmer training, innovation and extension systems (for example, demonstration plots, farmers' field schools, local resource persons) and infrastructure to enable scaling-up of GAP and climate smart applications by farmers and cooperative members beyond demonstration areas. The project activities include support to developing improved technical guidelines for GAP for sustainable cropping systems of the project targeted value chain crops; implementation and replication of sustainable production practices supported through farmer training, extension and field activities, contributing to biodiversity, soil and water conservation, reduced chemical use, climate change adaptability, emission reduction and increased production/improved livelihoods.

29. *Subcomponent 2.3: Strengthen Farmer Cooperatives.* Under this subcomponent, the project supports training and technical assistance to strengthen cooperatives in their technical, financial and commercial management. The support focuses on strengthening the governance of cooperatives, including entry-exit norms for membership, dilution of investors equity in favor of smallholder and farmer equity, and equitable benefit sharing. The project also finances investments by the cooperatives in green marketing infrastructure and certification, where this is necessary to realize the commercial benefits from improved farming practices and therefore strengthen the incentives for farmer adoption. The project will also provide technical assistance to potential participant cooperatives to prepare high-quality, 3S investment proposals for the first sub-component.

30. Under this component, the Global Environment Facility (GEF) grant will support activities to strengthen farmer's cooperatives such as through capacity building and training for replication of the demonstrated good agricultural practices beyond the demonstration and scale up sites in the project counties and city districts, and pilot biodiversity enabling practices and sound land management that contribute to emission reduction, reduced chemical use, increased resilience and increased production/improved livelihoods. Outputs of this



component would be: (i) Improved technical guidelines/good agricultural practices developed for sustainable rice cropping systems and other sustainable production practices; and (ii) implementation and replication of sustainable rice production systems supported through farmer training, extension and field activities, contributing to reduced chemical use, emission reduction and increased production/improved livelihoods.

### **Component 3: Project and Knowledge Management**

31. In addition to conventional project management and M&E functions, this component would include activities in knowledge management, to gather and share the experiences and lessons learned from the project (such as integrated landscape management, technical innovations, cost-benefits of different agricultural practices on different scales, and cost effectiveness of different regulatory oversight activities), both in relation to risk assessment and monitoring and to the demonstration and scaling-up successful CSA and GAP practices.

32. The project will regularly convene leaders and public and private stakeholders to exchange knowledge and lessons learned. The private sector will be an important catalyst for scaling and technology transfer within Hubei Province and scaling up nationwide through the GEF Food Systems, Land Use and Restoration (FOLUR) Impact Program (IP) China Child Project and ensuring that knowledge from the project is transferred into the provincial/national government's action plans, such as the next Five-Year Plan and provincial land use plans. Through the Global FOLUR IP Project and existing global and regional platforms, knowledge and lessons learned will be shared at the regional, national and global levels.

## **E. Implementation**

### Institutional and Implementation Arrangements

33. Institutional arrangements for project implementation have been established at the provincial level and at the four project counties. *Project Leading Groups (PLGs)* of high-level decision-makers from relevant key agencies are needed to provide oversight, strategic guidance, and inter-agency coordination for the project at province and county levels. In addition to DARA and its relevant departments, they would comprise representatives from the development and reform commissions, finance bureaus, water departments, environment departments, food safety agencies poverty reduction offices, auditor's offices, civil affairs bureaus, ethnic affairs commissions, women's federation. These will provide leadership, policy guidance, and strategic direction to the PMOs within their respective jurisdiction.

34. *Project Management Offices (PMOs)*. A provincial Project Management Office (PMO) has been established in the Hubei Provincial DARA Office, Foreign Capital Project Management Center. The provincial PMO is responsible for overall project coordination and management, including: annual work and budget planning; coordination of municipalities and counties in public outreach, work planning, procurement, fund withdrawal and disbursement management and financial reporting; technical and institutional implementation aspects; general oversight, field supervision and acceptance checks; and training and capacity building. The provincial PMO will also have primary responsibility for the review and appraisal of investments proposals of participating agro-enterprises prior to county PMO approval. It is responsible for overall project M&E and reporting to the Bank and will maintain and update, as necessary, the POM (including the FMM). The provincial PMO carries out project activities by following the agreed procedures and arrangements documented in the Project Operation Manual (POM). Amendments to the POM require prior written agreement of the Bank. The provincial PMO carries out project activities in accordance with the provisions of the Environmental Management Plan, the Pest



Management Plan and the Resettlement Policy Framework. Amendments to any of these documents require prior written agreement of the Bank.

35. *County PMOs.* County PMOs have been established in each of the project counties. They are responsible for project management at the local level. They will prepare county work plans and review and approve cooperative investment and annual work plans, approve and oversee cooperatives' use of project funds, coordinate line departments in the implementation of cross-village (township) cooperative investments, and coordinate enterprise participation. They will be responsible for the procurement and management of public production infrastructure and services. They will also review and approve investment plans of agro-enterprises that participate in the project and receive financial support. They will oversee cooperatives' use of project funds, coordinate relevant line departments in the implementation of cross-village (township) value chain development projects, and work with enterprises to promote agricultural technology transfer and information and marketing services needed by cooperatives. They will report on the utilization of project funds to the provincial PMO, prepare semi-annual progress reports, and recruit and train cooperative professional advisors. They will also be responsible for identifying and addressing implementation issues and manage the local complaints handling mechanism.

36. *Technical Expert Groups (TEGs).* The province and each county will set up a TEG comprised of technical experts from universities, academicians, agricultural research stations, extension services, and industry groups and the private sector. TEGs will participate in the selection of cooperatives/enterprises for financing under the project, and guide value-chain development investment planning of cooperatives to ensure technical rigor and feasibility, financial viability, and innovation. They will provide inputs to investment costing, technology innovation and dissemination, production organization and processing, and marketing research to strengthen the overall business orientation and operation of cooperatives. They will also assist the counties in soliciting interest from qualified agro-enterprise investors for investment in the project.

37. With regard to the cooperative-level sub-projects under Component 2, the project will support about 50-55 innovative solutions tailored to the principles of safe, sustainable and smart agriculture systems. Prior to Appraisal a total of four 3S technology packages for demonstration were proposed by the counties and the provincial PMO for the first year's implementation. Due diligence was carried out on each of them during Appraisal, with the Bank team providing detailed feedback to the client and the proponents. The remaining proposals targeting different 3S solutions, locations and enterprises will be identified during project implementation through a transparent selection and appraisal process defined in the POM, and subject to the World Bank's no objection.

38. From an institutional perspective there are a few areas that require capacity building, especially as they relate to strengthening of governance arrangements of farmer cooperatives. There are also risks related to the institutional capacity for implementation. Primary responsibility for project implementation will be by the Provincial Project Management Office (PPMO) under the Department of Agriculture and Rural Affairs (DARA) of Hubei Province, in coordination with county PMOs (CPMOs) that have been established in the DARAs of each of the participating project counties. Although the PPMO does not have recent experience in implementing World Bank-financed projects, it recently completed implementation of an IFAD-financed agriculture project. The four county DARAs have implemented similar government-funded projects. Nevertheless, this risk is rated as Substantial. Mitigation measures will include the provision of training on all aspects of Bank project management for both the PPMO and all CPMOs. It will be complemented by more intensive supervision during the first two years of project implementation.



39. The fiduciary risk is rated Substantial due the following considerations: (i) the PPMO and CPMOs do not have recent World Bank-financed project experience; (ii) the PMO and the four County PMOs have assigned FM and procurement staff. However, they do not have Bank FM or procurement experience; and (iii) the PPMO and CPMOs may have weak technical capacity in reviewing or preparing reimbursement and bidding documents; they may also be weak in monitoring deliverables, executing works contracts, and reviewing variations and withdrawal applications for disbursement, and acceptance of the works. To mitigate these potential risks, the proposed measures include: (i) the PMO and the county PMOs should set up project management team(s) comprising technical, FM, procurement and contract management experts who will assist the PPMO and CPMOs to review the bidding documents, bid evaluation reports, draft contracts, variations and withdrawal applications for disbursement, including supporting documents; (ii) the WB team should provide continuous FM and procurement training to the PPMO and CPMOs; and all the procurement staff assigned should register for the fiduciary e-learning platform developed by the Bank; and (iii) since the proposed project covers four counties with a variety of contracts and activities, it is recommended that FM and Procurement Manuals should be prepared, including detailed arrangements and procedures, so that the PMOs may easily follow the WB's procedures and requirements during project implementation.

#### F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

The proposed project will support specific food safety and environmental improvement activities in four counties/districts of Hubei province. The project counties are located in the catchment of the Yangtze River or its tributaries. Hubei Province is in the central part of China and at the middle stream of the Yangtze River. Hubei is surrounded by mountain ranges to the east, west and north. Among its total land area 185,900 km<sup>2</sup>, the mountains account for 56%, while hills and plains accounting for 24% and 20% respectively. Hubei has an abundant surface water resources. There are 4,228 large rivers, at a total length of 59.2 thousand km. In addition, Hubei is renowned for its significant number of lakes, most of which are distributed in the Hanjiang Plain. Currently, there are 755 lakes with a combined surface area being 2,706 km<sup>2</sup>. The project covers four counties/districts/cities, including Honghu City, Tongcheng County, Nanzhang County and Jingshan City. Some of these areas have abundant ecological resources with high biodiversity value, which have been well conserved in the form of natural reserves and national parks. The lakes within the project area are eutrophic due to the discharge of wastewater from agricultural and domestic sources. Hubei is in the subtropical region where the monsoon prevails. Apart from the mountainous area, Hubei is characterized with wet climate, long period free of frost, and rich precipitation. The provincial annual temperature averages 15OC-17OC. The coldest days are typically in January with the temperature averaging 2OC-4OC, while the highest temperature typically occurring in July ranging between 27OC-29OC. The precipitation declines from south to north in Hubei, and most takes place in June and July each year. The annual precipitation in Hubei is 800 mm-1600 mm. Project activities that involve civil works will be implemented in rural areas, covering 5 value chains including rice, tea, citrus, aquaculture, and animal husbandry. There are no densely populated areas in proposed project sites that involve civil works. Farm land has largely been encouraged to be consolidated for scaled cultivation upon farmers' free will. Project counties are predominantly populated by Han Chinese.



#### G. Environmental and Social Safeguards Specialists on the Team

Yongli Wang, Environmental Specialist

Aimin Hao, Social Specialist

#### SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The project is assigned Category B based on screening of environmental and social issues. An Environmental and Social Management Framework (ESMF), including a set of generic environmental management measures (ECOP) and pest management plan were prepared. Public consultation and information disclosure were conducted following OP4.01. A full social impact assessment (SIA) has been conducted. Informed by the Social Assessment report, land acquisition is unavoidable. Because detailed project activities will only be confirmed at a later stage, a RPF has been prepared to guide preparation and implementation of a RAP once detailed land acquisition needs is confirmed. There is no ethnic minority presence in project areas.
Performance Standards for Private Sector Activities OP/BP 4.03	No	This project will support some private enterprises to improve their environmental performance and the food safety management. Although private entities will be used to deliver some of the project activities, they will not be fully responsible for the E&S risk management.
Natural Habitats OP/BP 4.04	Yes	Given the environmental context of the project area and the type of the project, the policy is triggered for precautionary reasons. Agricultural production and small-scale infrastructure-related activities are likely to have limited impacts on natural habitats. Sub-project screening criteria include the requirement on avoidance of critical natural habitats or potentially significant impacts on natural habitats. The TOR for ESMP was prepared which includes measures to mitigate impacts on natural habitats. The project will



		not cause significant degradation or conversion of any critical natural habitats.
Forests OP/BP 4.36	No	The project is not expected to directly or indirectly impact on the health and quality of forests.  While the project does not finance directly pesticides and agrochemicals, increased level of agricultural production activities may lead to farmers using pesticides using their own funds. The pesticide use for this project would be limited. Overuse of agrochemicals would go against the core principles of the project. Conversely, the project is designed to help reduce the use of agrochemicals through the approach of IPM. A PMP was prepared which includes a set of physical, mechanical and biological pest control measures that are specific to each type of plant and a concrete plan to promote IPM to reduce chemical pesticides.
Pest Management OP 4.09	Yes	The project will not involve any physical cultural resources. Sub-project screening criteria of ESMF has included the requirement on avoidance or potential significant impacts on PCRs. Chance-find procedure has been included in the ECOPs of the ESMF.
Physical Cultural Resources OP/BP 4.11	No	Although there are ethnic minority people by official registration information in project area, but these people do not meet definition of OP4.10 from all aspects. The social assessment report indicates that there are 166 people with ethnic minority registration accounting for 0.002% of population in project area. These people mainly come via marriage and migration in previous generations and have been well adapted into the mainstream society, speaking the same language, working on allocated land the same way as other people, and cannot be separated from others from cultural, economic, or political perspectives. OP4.10 is not triggered.
Indigenous Peoples OP/BP 4.10	No	Project activities under component 2 will cause land acquisition/involuntary resettlement or temporary restriction of access to livelihoods and income generating activities during civil works associated with the project. According to the social assessment report conducted by the borrower, 80.03 mu (5.34 hectare) collective land that has been acquired in the past two years will be used for the Project, which affected 76 households with 330 persons, and 53 mu (3.53 hectare) collective land is planned to be
Involuntary Resettlement OP/BP 4.12	Yes	



		acquired for the Project to support two cooperatives, affecting 45 households with 135 persons. For land already acquired in the past two years, a due diligence report has been prepared and has been included in the appraisal package. Because the exact nature and location of civil works may not be determined up front for the planned land acquisition, the Borrower has prepared a Resettlement Policy Framework (RPF) which has been consulted upon, validated in-country and at the World Bank, and publicly disclosed in July and again in October 2019. A RAP will be prepared if details of livelihood impacts are clear during implementation under the guidance of the RPF.
Safety of Dams OP/BP 4.37	No	There are no dam-related activities in the project. The project will not develop new farmland. Some consolidation of existing plots of farmland to enable farm mechanization, reduce agrochemical use and promote adoption of advanced water efficient irrigation, e.g. trickle irrigation and sprinkle irrigation., will be required. The water for agricultural activities will be either taken from rivers or small ponds. In addition, some water storage tanks will be built in hilly areas to irrigate perennial plants, i.e., orange trees. Screening criteria to exclude activities to take water from reservoirs has been established in the ESMF.
Projects on International Waterways OP/BP 7.50	No	This policy is not triggered as the project does not involve trans-boundary rivers.
Projects in Disputed Areas OP/BP 7.60	No	This policy is not triggered as the project does not involve any disputed areas.

## KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

### A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

Three environmental policies are triggered for the project: OP4.01 Environmental Assessment, OP4.04 Natural Habitats, and OP4.09 Pest Management.

OP 4.01. The project is designed to improve food safety and environmental management and to reduce food safety and environmental pollution risks and reduce GHG emission in livestock, rice, fruits, vegetables, tea and rape seed value chains through capacity building activities and productive infrastructure investments in targeted four



counties/districts, establishment of data platforms and traceability systems, promotion of good agricultural practice to reduce the use of agrochemicals, and upgrading of testing equipment and labs. The project will also provide support to agro-enterprises to upgrade their facilities to meet required food safety and environmental standards.

Component 2 Promotion of Sustainable, Smart and Safe Agricultural Practice will involve physical activities. Under this component, the project will support a number of cooperatives and enterprises in four counties/districts of Hubei Province. The project will finance the renovation and rehabilitation of production bases and related infrastructure and equipment, the renovation/rehabilitation of their processing centers and related equipment, agricultural waste treatment and disposal capacities in the areas of tea, paddy, vegetables, fruits, and livestock. The typologies of the physical activities have been identified which include off-grade access roads, small-scale irrigation and drainage facilities, silos, farmland leveling/grading, small civil works such as labs, processing workshops and warehouses, biological isolation belts (combination of trees, shrubs and grass), and farmland residue treatment facilities. Except paddy and vegetables, the plants to be engaged by these cooperatives and enterprises are all perennial and existing local species. In addition, the farmland residue treatment facilities may involve the technical processes, such as the composting and combustion for power generation. The information collected from the feasibility study and site visit indicate that the capacity of the combustion facilities is very small, up to 1 MW each. The ECOP includes the measures to managing the gas emission, noise and wastes for such small combustion facilities.

The project will not involve any dams and legally protected physical cultural resources.

This component doesn't involve massive expansion of plantation or livestock farms, but aims to help farmers improve their safety and quality of products and treat/dispose of their agricultural wastes to reduce the use of agrichemicals and reduce GHG emission and pollution, and to make them become climate resilient.

Component 1 and 3 will support some studies for technical norms and good agricultural practices, and support capacity building and project management. The activities themselves will not cause any environmental and social impacts and implementation of the technical norms and good agricultural practices is only limited to the physical activities under the component 2 of the project.

The project will bring about positive environmental and social benefits in terms of improved agricultural practices and increased income-generation opportunities for people in the project areas. Through the promotion of good agricultural production practices, the project is expected to help local farmers to better carry out agricultural production in an environmentally sustainable manner, which will in the long term bring about environmental and social benefits in terms of protection of farmland, reduction of agricultural pollution and GHG emission, and improvement of food safety.

Agricultural production and infrastructure construction and operation activities, if not well managed, may bring about negative environmental and social impacts, including (1) impacts on natural habitats such as soil erosion, vegetation clearance, and water pollution, particularly in the areas near surface waters; (2) construction impacts and social disturbance such as nuisance odor, noise and dust associated with small civil works/facilities; (3) pollution associated with waste in livestock farms during operation; and (4) pesticide misuse associated with growing a number of agricultural products.

These environmental and social impacts are found to be limited, localized, and can be readily mitigated with good engineering design and measures. Cumulative impacts are minimal because the project will not support small-scale livestock farms which are lack of adequate capacity for bio-security and management of livestock waste. As per



OP4.01, the project is assigned Category B for environmental purposes.

As designed, the project will adopt a framework approach. As the location of investments are to be identified in the implementation stage, therefore, an Environmental and Social Management Framework (ESMF), including a set of generic Environmental Code of Practice (ECOP) for different physical activities, and Pest Management Plan (PMP), was developed during the project preparation. Several WBG Environmental, Health, and Safety Guidelines (EHSGs) relevant to the typologies of the project were incorporated into the ECOP where applicable.

The PPMO engaged an experienced EIA consultant to prepare the ESMF, which addresses the project-related environmental and social issues, and sets out principles and procedures to address the environmental and social impacts of subprojects. During the implementation, each cooperative and enterprise will prepare an ESMP based on the ESMF. The PPMO will take overall responsibility for the implementation of the ESMF and ESMP. Each county/district has established a PMO to take the responsibility for implementing the ESMF and ESMP within its geographical scope.

The ESMF includes a study of environmental and social baselines, which include specific descriptions of each project county/district which will help screen and assess subproject impacts during the project implementation. The ESMF includes an assessment of potential environmental and social impacts. The ESMF also covers procedures for subproject exclusion, screening, categorization (in line with the OP 4.01), environmental document preparation, information disclosure and public consultation, and review and approval, which follow the Bank safeguards policy and domestic environmental regulatory requirements. Such procedure for environmental and social management for each sub-project will be an integral part of the decision-making process at the county level and provincial level.

The ESMF includes a grievance redress mechanism and PMO/PIU capacity assessment and capacity-building plan, monitoring and reporting requirements, public consultation and information disclosure requirements, due diligence review requirements, a TOR for ESMP and SIA, exclusion checklist, and an environmental and social screening checklist, and a set of ECOP.

Consultation and information disclosure. Public consultation and information disclosure were carried out during the project preparation. The project environmental and social consultants carried out consultation through questionnaire surveys, focus group meetings, and interviews. Public opinion has been incorporated into the project design and the ESMF/ECOP. The draft full ESMF was disclosed locally and on the website of Hubei Agricultural and Rural Department, on Oct. 30, 2019. It was disclosed at the Bank's website on December 20, 2019.

OP 4.04. Given the nature and the environmental context of the project, some activities may affect natural habitats. although the location of the activities can not be identified until the implementation stage of the project, for the precautionary reason, this policy is triggered.

During the development of the ESMF, surveys on ecological and social baselines were carried out through desk review, consultation, and field visits. The ecologically sensitive areas, including nature reserves, scenery areas, geological parks, and drinking water source protection areas, were identified in the project region. The map for each project county/district has been prepared under the ESMF which has scoped these sensitive areas. This map will be used by the design team to avoid these sensitive areas. The project design and the ESMF have incorporated procedures and measures to avoid involving the identified sensitive areas and to mitigate effectively the potential impacts on the common natural habitats in the project area.



The agricultural products involved in the project are expected to be local species, most of which are perennial. The project will not support production scale-up through large-scale plantation development. The focus is on improving product quality and safety by promoting advanced agricultural technologies and organic food. There may be limited vegetation clearance and soil erosion associated with the growing activities, which have been assessed, and mitigation measures have been included in the ECOP. In addition, the project will support the development of freshwater aquaculture, which is only limited to the existing paddy field in the form of rice-fish farm.

OP 4.09. The project does not directly finance pesticides and agrochemicals. Conversely, this project intends to reduce the use of agrochemicals by promoting the integrated pest management approach which is a core part of the project design. The activities to be supported by the project may change the cropping pattern or the mode of pest management, thus a Pest Management Plan has been prepared. A survey of the pest management practices in the project area was conducted and plant specific pesticide practices were studied. The pesticides used for this project would be limited given the following considerations: (1) A significant share of agricultural products to be supported in the project are local perennial plants that are adapted to the local ecological environment and thus do not require significant use of agrochemicals. Compared to annual crop production, pesticide use is anticipated to be very limited and most of them are fungicide. (2) The main thrust of the project is to support the production of safe and pollution-free food products (organic and green food) for which currently a strong demand exists among increasingly quality conscious urban consumers. To this end, the PMP includes a set of physical, mechanical, and biological pest control measures that are specific to each type of plant, and a concrete plan to promote IPM to reduce chemical pesticides. Capacity-building, monitoring, and reporting requirements are included as well. Further, during the project implementation, the proposals prepared by farmer cooperatives are expected to present pest management measures (including training aspects) specific to plant types. A clear rationale and justification are required for any pesticide use, given that the purpose of the project is to produce safe, high-quality food.

OP4.12. Based on the social impact assessment findings, land acquisition is unavoidable to accommodate small scale rural infrastructure such as agricultural products processing and storage. Initial assessment on planned activities indicated that 80.03 mu (5.34 hectare) collective acquired in the past two years will be used for the Project, which affected 76 households with 330 persons, and 53 mu (3.53 hectare) collective land is planned to be acquired for the Project to support two cooperatives, affecting 45 households with 135 persons. For land already acquired in the past two years, a due diligence report has been prepared and has been included in the appraisal package.

Because the exact nature and location of civil works may not be determined up front for the planned land acquisition, the Borrower has prepared a Resettlement Policy Framework (RPF) which has been consulted upon, validated in-country and at the World Bank, and publicly disclosed in July and again in October 2019. A RAP will be prepared if details of livelihood impacts are clear during implementation under the guidance of the RPF.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:  
The project will reduce the pollution discharge into the surface waters which are eutrophic due to the discharge of wastewater from agricultural and domestic sources. The water quality in the waters in the project area will be improved in the long term, and the natural habitats associated with the waters will be improved as a result. The risk of public health due to the food safety issue will be alleviated, and the income of the farmers will be increased given the quality and quantity of the food will be improved by the project which help the farms to be more climate resilient and produce better quality products. The negative impacts associated with the project activities are expected to be limited, localized and temporary. The ESMF included ECOPs to manage these adverse environmental impacts.

It is anticipated that this project will not involve any cumulative impacts. The conditions triggering the cumulative impacts assessment will be largely avoided by using the exclusion list, such as excluding small size livestock farms and



excluding location of sub-projects from sensitive areas. In addition, the project will largely support the waste management and pollution control in the existing enterprises/cooperatives without supporting massive expansion of livestock farms and plantations. Thus, it is expected that there is unlikely to be any negative impacts cumulative due to the project.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

At project design stage, four counties/districts have been chosen from a number of candidate counties/districts in Hubei Province based on a set of criteria designed to select the counties/districts with features easily duplicable to other areas and the greatest potential for pollution reduction. In addition, during the development of the project design and ESMF, several alternatives were considered, including selection of plant species and growing practices that are in favor of the control of soil erosion and water pollution and the best use of pesticides.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

The PPMO engaged an experienced EIA consultant to prepare the ESMF, which addresses the project-related environmental and social issues, and sets out principles and procedures to address the environmental and social impacts of subprojects. During the implementation, each cooperative and enterprise will prepare an EMP based on the ESMF. The PPMO will take overall responsibility for the implementation of the ESMF and EMP. Each county/district has established a PMO to take the responsibility for implementing the ESMF and EMP within its geographical scope. The full-time staff have been designated by the PPMO and County PMOs to lead the implementation the ESMF and ESMP. Extra environmental and social experts will be engaged by the PPMO and County PMO to strengthen their capacity. In the ESMF, a capacity training plan has been developed for the PPMO and County PMO, and the enterprises/cooperatives.

The ESMF includes a study of environmental and social baselines, which include specific descriptions of each project county/district which will help screen and assess subproject impacts during the project implementation. The ESMF includes an assessment of potential environmental and social impacts. The ESMF also covers procedures for subproject exclusion, screening, categorization (in line with the OP 4.01), environmental document preparation, information disclosure and public consultation, and review and approval, which follow the Bank safeguards policy and domestic environmental regulatory requirements. Such procedure for environmental and social management for each sub-project will be an integral part of the decision-making process at the county level and provincial level.

The ESMF includes a grievance redress mechanism and PMO/PIU capacity assessment and capacity-building plan, monitoring and reporting requirements, public consultation and information disclosure requirements, due diligence review requirements, a TOR for ESMP and SIA, exclusion checklist, and an environmental and social screening checklist, and a set of ECOP.

The client commissioned an experienced social assessment team who conducted a full social impact assessment. Based on the social assessment report, the client prepared a Resettlement Policy Framework to guide preparation and implementation of a RAP if land acquisition needs occur during implementation stage. The client has no previous experience in implementation WB financed projects, and it is recommended that designated staff at provincial and county levels would be appointed to act as focal points to coordinate implementation of safeguards work. Training on safeguards compliance will be delivered to provincial and county PMOs once the project is effective.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.



Consultation and information disclosure. Public consultation and information disclosure were carried out during the project preparation. The project environmental and social consultants carried out consultation through questionnaire surveys, focus group meetings, and interviews. Public opinion has been incorporated into the project design and the ESMF/ECOP. The draft full ESMF was disclosed locally and on the website of Hubei Agricultural and Rural Department, on Oct. 30, 2019. It was disclosed at the Bank's website on December 20, 2019.

## B. Disclosure Requirements

### Environmental Assessment/Audit/Management Plan/Other

Date of receipt by the Bank	Date of submission for disclosure	For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors
11-Oct-2019	30-Oct-2019	

#### "In country" Disclosure

China

30-Oct-2019

Comments

### Resettlement Action Plan/Framework/Policy Process

Date of receipt by the Bank	Date of submission for disclosure
30-Oct-2019	31-Oct-2019

#### "In country" Disclosure

China

31-Oct-2019

Comments

### Pest Management Plan

Was the document disclosed prior to appraisal?	Date of receipt by the Bank	Date of submission for disclosure
Yes	11-Oct-2019	30-Oct-2019

#### "In country" Disclosure



China

30-Oct-2019

Comments

If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.

If in-country disclosure of any of the above documents is not expected, please explain why:

**C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)**

**OP/BP/GP 4.01 - Environment Assessment**

Does the project require a stand-alone EA (including EMP) report?

Yes

If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?

No

Are the cost and the accountabilities for the EMP incorporated in the credit/loan?

No

**OP/BP 4.04 - Natural Habitats**

Would the project result in any significant conversion or degradation of critical natural habitats?

No

If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?

NA

**OP 4.09 - Pest Management**

Does the EA adequately address the pest management issues?

Yes

Is a separate PMP required?

Yes

If yes, has the PMP been reviewed and approved by a safeguards specialist or PM? Are PMP requirements included in project design? If yes, does the project team include a Pest Management Specialist?

Yes

**OP/BP 4.12 - Involuntary Resettlement**

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?

Yes

If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?

No

**The World Bank Policy on Disclosure of Information**

Have relevant safeguard policies documents been sent to the World Bank for disclosure?

Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?

Yes

**All Safeguard Policies**

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?

Yes

Have costs related to safeguard policy measures been included in the project cost?

Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?

Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?

Yes

**CONTACT POINT****World Bank**

William R. Sutton  
Lead Agriculture Economist

Sitaramachandra Machiraju  
Senior Agribusiness Specialist

**Borrower/Client/Recipient**



People's Republic of China

Xiang Peng

Deputy Director

zjc@mof.gov.cn

#### **Implementing Agencies**

Hubei Provincial Department of Agriculture and Rural Affairs

Lihua Zhao

Deputy Director

hubei3sppmo@qq.com

#### **FOR MORE INFORMATION CONTACT**

The World Bank

1818 H Street, NW

Washington, D.C. 20433

Telephone: (202) 473-1000

Web: <http://www.worldbank.org/projects>

#### **APPROVAL**

Task Team Leader(s):	William R. Sutton Sitaramachandra Machiraju
----------------------	--

#### **Approved By**

Safeguards Advisor:	Ekaterina Romanova	03-Jan-2020
Practice Manager/Manager:	Dina Umali-Deininger	08-Jan-2020
Country Director:	Harold L. Bedoya	14-Jan-2020