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Report No: PAD821

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT FROM THE
GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF US$5.1 MILLION

TO THE

PEOPLE'S REPUBLIC OF CHINA

FOR A

CLIMATE SMART STAPLE CROP PRODUCTION PROJECT

July 11, 2014

China and Mongolia Sustainable Development Unit
Sustainable Development Department
East Asia and Pacific Region

CURRENCY EQUIVALENTS
(Exchange Rate Effective June 18, 2014)

Currency Unit = CNY
CNY 6.23 = US$1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

CA	Conservation Agriculture
CNAO	China National Audit Office
CQS	Selection of Consultant's Qualifications
CSA	Climate Smart Agriculture
CLG	County Leading Group
DA	Designated Account
DDG	Deputy Director General
DOA	Department of Agriculture
EA	Environmental Assessment
ECOP	Environmental Code of Practice
ERR	Economic Rate of Return
FIRR	Financial Internal Rate of Return
FM	Financial Management
FMM	FM Manual
FMS	FM Specialist
FYP	Five Year Plan
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEO	Global Environmental Objective
GHG	Greenhouse Gas
GIS	Geographic Information System
Ha	Hectare
IPM	Integrated Pest Management
M&E	Monitoring and Evaluation
MOA	Ministry of Agriculture
MOF	Ministry of Finance
NCB	National Competitive Bidding
NDRC	National Development and Reform Commission
NEG	National Expert Group
NPD	National Project Director
NPSC	National Project Steering Committee
OP	Operations Policy
PDO	Project Development Objective
PIM	Project Implementation Manual
PLG	Provincial Leading Group
PMO	Project Management Office, MOA
PMP	Pest Management Plan
PMU	Project Management Unit
QBS	Quality Based Selection
RPF	Resettlement Policy Framework
SA	Social Assessment
SOC	Soil Organic Carbon
SOE	Statement of Expenditures
SSS	Single Source Selection
WA	Withdrawal Application

Regional Vice President:	Axel van Trotsenburg
Country Director:	Klaus Rohland
Sector Director:	John A. Roome (through June 30, 2014)
Global Practice Senior Director:	Juergen Voegele (from July 1, 2014)
Global Practice Director:	Ethel Sennhauser (from July 1, 2014)
Sector Manager:	Iain Shuker (through June 30, 2014)
Global Practice Manager:	Nathan M. Belete (from July 1, 2014)
Task Team Leader:	Jiang Ru
Co-Task Team Leader:	Wendao Cao

CHINA
Climate Smart Staple Crop Production (P144531)

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PAD DATA SHEET

China

Climate Smart Staple Crop Production (P144531)

PROJECT APPRAISAL DOCUMENT

EAST ASIA AND PACIFIC

GAGDR

Report No.: PAD821

Basic Information			
Project ID P144531	EA Category B - Partial Assessment		Team Leaders Jiang Ru, Wendao Cao
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ]		
	Financial Intermediaries [ ]		
	Series of Projects [ ]		
Project Implementation Start Date 01-Sep-2014	Project Implementation End Date 30-Sep-2019		
Expected Effectiveness Date 31-Dec-2014	Expected Closing Date 31-Mar-2020		
Joint IFC No			GEF Focal Area Climate change
Practice Manager	Senior Global Practice Director	Country Director	Regional Vice President
Nathan M. Belete	Juergen Voegele	Klaus Rohland	Axel van Trotsenburg

Borrower: PEOPLE'S REPUBLIC OF CHINA			
Responsible Agency: Ministry of Agriculture			
Contact:	Wang Yanliang	Title:	Deputy Director General, Science, Tech & Education Dept
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Project Financing Data(in USD Million)

[ ]	Loan	[ ]	IDA Grant	[ ]	Guarantee
[ ]	Credit	[X]	Grant	[ ]	Other

Total Project Cost:	30.10	Total Bank Financing:	0.00
Financing Gap:	0.00		

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Financing Source	**Amount**
Borrower	25.00
Global Environment Facility (GEF)	5.10
Total	30.10

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Expected Disbursements (in USD Million)

Fiscal Year	2015	2016	2017	2018	2019	2020	0000	0000	0000
Annual	0.30	0.70	0.80	1.00	1.10	1.20	0.00	0.00	0.00
Cumulative	0.30	1.00	1.80	2.80	3.90	5.10	0.00	0.00	0.00

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Proposed Global Environmental Objective(s)

The proposed project’s Project Development Objective (PDO) and its Global Environmental Objective (GEO) is to demonstrate climate smart and sustainable staple crop production in Huaiyuan County of Anhui Province and Yexian County of Henan Province.

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Components

Component Name	**Cost (USD Millions)**
CSA Demonstration	23.96
Policy Development and Knowledge Management	3.90
Project Management	2.24

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Institutional Data

Practice Area / Cross Cutting Solution Area

Agriculture

Cross Cutting Areas

[ ] Climate Change

[ ] Fragile, Conflict & Violence

[ ] Gender

[ ] Jobs

[ ] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Agriculture, fishing, and forestry	Crops	80	20	80
Agriculture, fishing, and forestry	Agricultural extension and research	20		
Total		100		

☐ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

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Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Environment and natural resources management	Climate change	100
Total		100

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Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]
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Does the project require any waivers of Bank policies?	Yes [ ] No [X]
Have these been approved by Bank management?	Yes [ ] No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ] No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X] No [ ]
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Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04		**X**
Forests OP/BP 4.36		**X**
Pest Management OP 4.09	**X**	
Physical Cultural Resources OP/BP 4.11		**X**
Indigenous Peoples OP/BP 4.10		**X**
Involuntary Resettlement OP/BP 4.12	**X**	
Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50		**X**
Projects in Disputed Areas OP/BP 7.60		**X**
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Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Institutional Arrangements	**X**		CONTINUOUS

Description of Covenant

Provision requiring the maintenance of proper institutional arrangements at the national, provincial and county level (Section I.A of Schedule 2 to the Grant Agreement).

Name	**Recurrent**	**Due Date**	**Frequency**
Project Implementation Manual (PIM)	**X**		CONTINUOUS

Description of Covenant

Provision requiring carrying out project activities, including the provision of subsidies and sub-grants, pursuant to the provisions of the PIM (Sections I.C and F of Schedule 2 to the Grant Agreement).

Name	Recurrent	Due Date	Frequency
Safeguards	X		CONTINUOUS

Description of Covenant

Provision requiring carrying out project activities in accordance with the provisions of the Environmental Codes of Practice, the Pest Management Plan and the Resettlement Policy Framework (Section I.D (Safeguards) of Schedule 2 of the Grant Agreement).

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Conditions

Source Of Fund	Name	Type
GEFU	Signing of Implementation Agreements between MOA and Project Provinces	Disbursement

Description of Condition

No withdrawal shall be made for payments for eligible expenditures under Category (1) of Section IV.A.2) of Schedule 2 of the Grant Agreement before MOA has entered into an Implementation Agreement with each Project Province on terms and conditions satisfactory to the World Bank (Section IV.B.1(b) of Schedule 2 to the Grant Agreement).

Team Composition

Bank Staff

Name	Title	Specialization	Unit
Ademola Braimoh	Sr Natural Resources Mgmt. Spec.	Sr Natural Resources Mgmt. Spec.	GAGDR
Wendao Cao	Senior Rural Development Specialist	Co-Team Leader	GAGDR
Junxue Chu	Senior Finance Officer	Senior Finance Officer	CTRLN
Yi Dong	Sr Financial Management Specialist	Sr Financial Management Specialist	GGODR
Yiren Feng	Senior Environmental Specialist	Senior Environmental Specialist	GENDR

Minneh Mary Kane	Lead Counsel	Lead Counsel	LEGES
Bernardita Ledesma	Operations Analyst	Operations Analyst	GPSOS
Zijing Niu	Program Assistant	Program Assistant	EACCF
Aristeidis I. Panou	Consultant	Counsel	LEGOP
Rama Chandra Reddy	Senior Carbon Finance Specialist	Senior Carbon Finance Specialist	GCCGT
Jiang Ru	Senior Environmental Specialist	Team Lead	GENDR
Yunqing Tian	Team Assistant	Team Assistant	EACCF
Yuan Wang	Procurement Specialist	Procurement Specialist	GGODR
Songling Yao	Senior Social Development Specialist	Senior Social Development Specialist	GURDR
Zhihong Zhang	Senior Program Officer	Senior Program Officer	GCCCI

Non Bank Staff

Name	Title	City

.

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
China	Henan Sheng	Henan Sheng	**X**		
China	Anhui Sheng	Anhui Sheng	**X**		

I. STRATEGIC CONTEXT

A. COUNTRY CONTEXT

1. China's greenhouse gas emissions contribute significantly to global climate change. It is also a country at the risk of adverse impacts associated with climate change. China has strived to integrate climate smart development actions into its green growth strategy. In doing so, the Government has developed the National Program on Climate Change (2007), the White Paper on China's Policies and Actions for Addressing Climate Change (2011) and most recently the Work Plan for Greenhouse Gas Emissions Control during the Period of the 12th Five-Year Plan (FYP) for National Economic and Social Development (2011). Consistent with these frameworks, the Government's Action Program on Climate Change for Agriculture (2008) emphasized sustainable crop production systems to enhance crop yields and farmers' incomes while reducing greenhouse gas (GHG) emissions, and promoting resilience to climate change induced variability in crop production systems. In this regard, the Government has emphasized the importance of promoting sustainable crop production technologies and establishing scientific monitoring and evaluation (M&E) methods to ensure effective GHG emission reductions from crop production and improve its capacity to adapt to a changing climate that is expected to be hotter nationwide, increased risk to droughts in Northern China, and floods in Southern China.

B. SECTORAL AND INSTITUTIONAL CONTEXT

2. The agriculture sector of China has tried to support 22% of world population with only 9% of world's arable land. To achieve food security, China has developed intensive crop production systems that rely on high consumption and inefficient use of fertilizers, pesticides and irrigation water inputs.[1] As a result, China's crop production has significant GHG emissions.[2] Heavy reliance on synthetic fertilizers has also stressed China's limited arable land. China's cropland accounts for over 70% of the total arable land area, and soil organic carbon (SOC) in typical cropland of China is 30% lower than the world average, and over 50% lower than that of Europe. This situation is aggravated by unsustainable crop production practices which often include excessive tillage, straw burning, and low rates of organic residue return to soil, mono-cropping or limited crop rotation, and flood irrigation. These practices have not only led to the high GHG emissions from crop production but also reduced resilience of the country's crop production systems to the expected climate change.

[1] China consumed roughly 30% of the global fertilizers and was ranked first in the world on the fertilizer and pesticide consumption from 1994 to 2011. In 2010, China consumed 56.3 million tons of fertilizers with a utilization rate of only 30-35%, while developed countries exceeded 60% utilization rate. In the same year, China used 350 billion cubic meters of irrigation water for agricultural production with an effective utilization rate of only about 50%, compared to 80% in developed countries. Similarly, the utilization rate of pesticides in China was only about 30%, which is much lower than that of developed countries.

[2] The China's Second National Communication on Climate Change estimated that emissions from agricultural sources accounted for 11.6% of the country's GHG emissions in 2005. Specifically, the agricultural sector contributed 56.6% of China's total methane releases and 74.0% of China's total nitrous oxide (N_2O) emissions. Among others, rice production accounted for 31.5% of agricultural methane releases, and crop production contributed 71.3% N_2O emissions.

3. High inputs and low efficiency in their utilization and low SOC content imply that there is a high potential for China to undertake climate change mitigation and adaptation actions to improve economic and environmental performance of its crop production. Recognizing the potential, China is implementing on its own and in collaboration with international organizations, including the World Bank, a program to pilot low GHG emission and soil carbon sequestration technology (such as precision fertilization and crop residue retention in the field) to avoid and/or minimize agriculture emissions. In addition, China continues to improve its irrigation infrastructure and promote water-saving irrigation, stress-resistant crop varieties and diversification of cropping systems to improve climate resilience of its crop production systems. A key focus of China's initiatives is to introduce to farmers technologies and practices (e.g., precision fertilization and no-till land preparation) that can promote efficiency of GHG intensive synthetic inputs, improve soil productivity, and achieve sustainable crop yields. These actions comply with the principle of climate smart agriculture (CSA), which seeks to increase productivity in an environmentally and socially sustainable manner, strengthen the resilience of cropping systems to climate change, minimize the agricultural sector's contribution to climate change by reducing GHG emissions and sequestering soil organic carbon.

4. The Ministry of Agriculture (MOA) has identified a number of factors limiting the uptake of climate smart crop production technologies in China: (a) limited public support to the screening and assessment of agricultural technologies; (b) inadequate demonstration on the ground; (c) limited awareness of farmers and local governments; (d) lack of policy incentives; and (e) low capacity of extension services to disseminate advisories to famers. To address these challenges and promote continuous identification and adoption of context-specific climate smart crop production technologies, MOA requested the Bank's support to prepare and implement this project financed by a grant from the Global Environment Facility (GEF). The project has been submitted to the GEF for endorsement on June 3, 2014.

C. HIGHER LEVEL OBJECTIVES TO WHICH THE PROJECT CONTRIBUTES

5. This project will be an integral part of China's efforts to address climate change issues in the agricultural sector. Successful implementation of this project will contribute to the country's efforts to reduce China's GHG emissions per unit of Gross Domestic Product (GDP) by 40-45% by 2020 compared to its 2005 level. At a higher level, the project will contribute to global efforts on GHG emission reduction. Furthermore, the project would help project farmers improve their crop productivity and income, complement the government's ongoing poverty reduction efforts, as well as support the achievement of the Bank's twin goals, eliminating extreme poverty and boosting shared prosperity.

II. PROJECT DEVELOPMENT OBJECTIVE

6. The proposed project's Project Development Objective (PDO) and its Global Environmental Objective (GEO) is to demonstrate climate smart and sustainable staple crop production in Huaiyuan County of Anhui Province and Yexian County of Henan Province. This will be achieved through promotion of low carbon production techniques and practices and

promote carbon sequestration in China's three main staple crops under two major crop production systems: the rice-wheat system in Huaiyuan and the wheat-corn system in Yexian.[3]

A. PROJECT BENEFICIARIES

7. At the national level, the project's direct beneficiary is MOA. In the two project counties, the project's direct beneficiaries are (a) agricultural bureaus and extension service centers; (b) agricultural machinery operators/cooperatives and pest management service providers; and (c) farmers and crop production cooperatives. The project plans to provide financial and technical support to over 19,000 households in 30 project villages of four townships in the two project counties to help them improve their crop production practices. According to the 2013 official statistics, about 12% of these targeted households are living below the national poverty line (extreme poverty).

B. PDO LEVEL RESULTS INDICATORS

8. Key indicators of results for the project include: (a) reduced GHG emissions; (b) increased soil organic carbon content; and (c) change in average crop yields.

III. PROJECT DESCRIPTION

A. PROJECT COMPONENTS

9. **Component 1: CSA Demonstration**. This component will support (a) demonstration of GHG emission reduction and efficient irrigation techniques; (b) demonstration of carbon sequestration techniques; (c) new production technique pilots; (d) technical support for CSA demonstration; and (e) monitoring and evaluation (M&E).

10. **Component 2: Policy Development and Knowledge Management.** This component will support (a) development of national CSA policies, strategy and guidelines; (b) provincial and national level dissemination of project knowledge; and (c) promotion of international CSA cooperation.

11. **Component 3: Project Management**. This component will support project implementing agencies to manage, supervise and monitor project implementation.

B. PROJECT FINANCING

12. The project will be financed by a GEF grant in the amount of US$5.1 million. The lending instrument is Investment Project Financing. In addition to the GEF financing, MOA will provide $3.8 million co-financing to support policy studies and knowledge management activities under Component 2 as well as national level project management activities under Component 3. The two project counties will provide a total of $21.2 million to support implementation of CSA demonstration activities under Component 1 and county level project management activities under Component 3.

[3] Production of these three staple crops accounts over 85% of staple crop production of China.

Project Cost and Financing

(in million US dollars)

Project Components	Project cost	GEF Financing	% Financing
1. CSA Demonstration	23.96	3.96	16.5%
2. Policy Development and Knowledge	3.90	0.90	23.1%
Management	2.24	0.24	10.7%
3. Project Management			
Total Financing Required	30.10	5.10	16.9%

IV. IMPLEMENTATION

A. INSTITUTIONAL AND IMPLEMENTATION ARRANGEMENTS

13. Institutional arrangements for project implementations have been established at the national, provincial and county levels. At the national level, a National Project Steering Committee (NPSC) led by MOA has been set up with participation of key national stakeholders to guide overall implementation of the project. MOA has designated a National Project Director (NPD) and established a Project Management Office (PMO) to manage project implementation with technical support from a National Expert Group (NEG). At the provincial level, a Provincial Leading Group (PLG) led by the Department of Agriculture (DOA) of each of the two project provinces has been established to oversee project implementation in the respective province with support from a Project Management Unit hosted in the DOA. At the county level, a County Leading Group (CLG) led by a deputy head of the county government has been set up to oversee project implementation in the project county with support of county PMU hosted by the Agriculture Bureau of the respective county.

14. MOA will adopt a Project Implementation Manual (PIM) before project approval to guide project implementation. The Manual provides detailed information on (a) the project objective, activities and financing arrangements; (b) roles and responsibilities of the PMO, county PMUs and other entities involved in project implementation; (c) financial management, disbursement, procurement, safeguards arrangements; (d) steps and procedures for project implementation; and (d) monitoring and evaluation, reporting and information disclosure arrangements.

B. RESULTS MONITORING AND EVALUATION

15. An M&E system has been established under Component 1(e) to monitor the project's impacts. For CSA related M&E activities, internationally accepted methodologies have been adopted with the consideration of both costs and accuracy. M&E data generated will provide a concrete basis upon which to evaluate results/performance, as well as the cost effectiveness, of various CSA technical options. Related to the CSA monitoring, the socioeconomic monitoring will be performed under project implementation to properly track the social economic impacts of CSA interventions. In addition, environmental monitoring will be performed to ensure that negative environmental impacts associated with project interventions are properly assessed and

mitigated. To help properly store, process and present data collected through various monitoring activities, the project will support the development and operation of a geo-referenced information system.

C. SUSTAINABILITY

16. The sustainability of project promoted CSA interventions will be largely dependent on the cost-effectiveness of the technical measures adopted in reducing GHG emissions, increasing carbon sequestration and improving climate resilience of crop production systems. But, more importantly, the sustainability in the short-term will be dependent on the project's impacts on maintaining (or even increasing) productivity. Technical and financial analyses during project preparation show that the project's overall impacts on productivity are expected to be positive. Detailed M&E activities will be performed during implementation to verify these impacts. Based on actual cost-effectiveness and financial impacts of various CSA interventions, policy measures developed under Component 2 are expected to further improve both economic and financial viability of these interventions and promote long-term sustainability of interventions. Institutionally, by supporting service providers and farmer field schools, positive results of CSA demonstration are expected to get rapidly disseminated within and beyond the project areas. As the first CSA cooperation between the Bank and MOA, the project's sustainability will be further strengthened by follow-up CSA operations being developed under the Memorandum of Understanding on Climate Change Cooperation between the Bank and China. Finally, the CSA strategy to be developed under the project and the project's contribution to Nationally Appropriate Mitigation Actions in the agriculture sector are significant ways of facilitating the scale up of project results in the provinces and nationally.

V. KEY RISKS AND MITIGATION MEASURES

A. RISK RATINGS SUMMARY TABLE

Risk Category	**Rating**
Stakeholder Risk	Low
Implementing Agency Risk	
- Capacity	Moderate
- Governance	Low
Project Risk	
- Design	Low
- Social and Environmental	Low
- Program and Donor	NA
- Delivery Monitoring and Sustainability	Moderate
Overall Implementation Risk	**Moderate**

B. OVERALL RISK RATING EXPLANATION

17. Key risks identified at project preparation have been fully evaluated and mitigated as much as feasible during project preparation. As project implementing agencies are new to Bank operations and uptake by farmers in the long run may depend on continued government support, the overall risk of the project is rated as *Moderate* at the appraisal stage. Mitigation measures to address these challenges have been incorporated into project design. These risks will be closely monitored during project implementation. If needed, their ratings will be adjusted accordingly and corresponding mitigation measures will be implemented.

VI. APPRAISAL SUMMARY

A. ECONOMIC AND FINANCIAL (IF APPLICABLE) ANALYSIS

Economic Analysis

18. Cost benefit analysis was performed at the project level for the aggregated interventions, using the "with/without project" comparison. The incremental economic costs include (a) investment for new technologies adoption, (b) operational costs for agricultural production; and (c) project management and capacity building costs. The major benefits included in the analysis are: (a) incremental agricultural production; (b) savings from reduced agricultural input costs, including fertilizer, agro-chemicals, diesel and irrigation water; and (c) environmental benefits from GHG emission reduction. Based on the identified incremental benefits and costs, the Economic Rate of Return (ERR) of the project was calculated with conservative assumptions of output market prices and the economic price of carbon reduction. As a result, the project's ERR is estimated at 19%, exceeding the 12% economic discount rate that is normally applied to Bank projects in China as well as the 8% used by the National Development and Reform Commission (NDRC) of China. The project therefore is economically viable and robust.

Financial Analysis

19. Financial analysis has been carried out at the household level by comparing "with" and "without" situations of various project interventions. The incremental project costs and benefits are calculated based on the expected changes in (a) crop yields; (b) agricultural inputs; and (c) investment costs. It is estimated that without government subsidies the pest management and irrigation infrastructure activities will be financially viable with financial internal rate of returns (FIRRs) above the discount rate of 12%. However, fertilization and conservation agriculture (CA) activities will generate FIRRs below the discount rate. With the proposed project subsidies, all pest management, fertilization and irrigation investments will secure FIRRs far above 12%, indicating the proposed project subsidies could be adjusted to a lower level and may still be able to attract farmers to adopt such activities. However, it is estimated that the proposed CA investments may still be financially unviable as such investments mainly lead to positive externality (carbon sequestration) that cannot be internalized by project farmers. Based on the above analysis, project subsidies have been designed as activity specific and will be adjusted based on actual implementation results to enable efficient and effective use of project financing.

B. TECHNICAL

20. During project preparation, detailed production baselines of the rice-wheat cropping system in Huaiyuan County of Anhui Province and the wheat-corn cropping system in Yexian County of Henan Province were investigated. Based on the baseline production practices and international and domestic best practices, applicable CSA interventions were identified for key crop production processes (e.g. variety selection, field preparation, sowing, tillage, nutrient and water management, pest and disease management, harvesting, crop residue management, agro-forestry integration) of each cropping system. In addition, crop rotation options for the two cropping systems were examined. Selected CSA interventions were then divided into two groups: one group of technical options (such as precision fertilization, integrated pest management, water management, and crop residue management) that are currently being promoted in the project areas and/or in the country; and another group of options (such as CA for rice production, biochar application, and crop rotation) that are relatively new to targeted farmers or have not yet been tested in the project areas or even in China. The first group of CSA interventions will be first demonstrated under the project at a large scale while the second group of interventions will be piloted at a small-scale first and scaled up selectively based on their demonstrated on-the-ground results.

C. FINANCIAL MANAGEMENT

21. The PMO established under the MOA will be responsible for managing the preparation and implementation of the project. County PMUs established in two project counties will be implementing the activities under their management. The GEF grant, including overseeing the Designated Account, will be managed by the Ministry of Finance (MOF). A financial management capacity assessment has been conducted by the Bank and actions to strengthen the project's financial management capacity have been agreed to with the PMO. The financial management assessment has concluded that with the implementation of the proposed actions, the financial management arrangements will satisfy the Bank's requirements under OP/BP 10.00. Annex 3 provides additional information on financial management.

D. PROCUREMENT

22. All project procurement activities will be carried out by the MOA PMO. A full-time staff has been designated for procurement tasks. The key issues and risks concerning procurement for implementation of the project are that (a) the PMO and its designated procurement staff have no prior procurement experience in the Bank-financed projects although the PMO is implementing two GEF projects implemented by the United Nations Development Programme with different procurement policy and procedures from those of the Bank; (b) during implementation, the PMO may follow domestic procurement practices unintentionally, which may lead to possible procurement delays and non-compliance with the Bank's procurement guidelines. To manage and mitigate these risks, the designated procurement staff has attended procurement training provided by the Bank team during project preparation and will attend additional trainings during project implementation. During implementation, PMO will arrange continuous capacity building events on procurement and contract management for staff members of the PMO and two county PMUs. The PMO will provide support and monitor closely the implementation of project

activities carried out by the county PMUs. A procurement plan for project implementation was agreed at the negotiations. Annex 3 provides additional information on the project's procurement arrangements.

E. SOCIAL (INCLUDING SAFEGUARDS)

23. By promoting sustainable crop production practices, the project is expected to generate positive environmental, health, and socioeconomic benefits to project farmers in the two project counties. A social assessment (SA) was carried out during project preparation to investigate the socioeconomic baseline of project areas and to consult various stakeholders especially targeted project farms on their concerns and interests in the proposed project design. Findings of SA have been incorporated into the final project design.

24. The SA process has adopted a gender differentiated approach and identified targeted female farmers. It was noted that female farmers are the main rural labor force in managing crop production. Female farmers are often with limited education. As they are key participants in the project, the SA recommends that project interventions be designed to fully incorporate the needs of female farmers. Two specific indicators of the results – numbers of female farmers receiving training and participating in project activities – will be closely monitored through the continued SA process under project implementation to ensure full and meaningful participation of female farmers in project activities.

25. The SA has identified a Hui Minority village in Yexian County. Detailed review finds that the villagers have their own religion and customs that are different from the dominant society. However, the villagers share the same political and economic institutions and use Mandarin as the dominant language. It is concluded that these villagers are not Indigenous People as defined in OP 4.10 of the Bank. As such, OP 4.10 is not triggered.

26. The Bank's OP 4.12 Involuntary Resettlement is triggered as the project's counterpart funding will finance the construction/rehabilitation of on-farm crop production infrastructure such as farm roads or irrigation channels that may involve small-scaled land acquisition activities. During preparation, MOA's consultant has prepared a Resettlement Policy Framework (RPF) for the entire project with: (a) detailed procedures on preparation, review and approval of potential land acquisition activities; (b) institutional and financial arrangements for carrying out such activities; and (c) the monitoring plan for supervise the implementation of such activities. The RPF, agreed between the Bank and MOA, was disclosed locally in the two project counties on April 24, 2014 and in InfoShop on May 8, 2014. The PMO has committed the full ownership and responsibility of implementing the agreed RPF under this project.

F. ENVIRONMENT (INCLUDING SAFEGUARDS)

27. Successful implementation of the project will lead to overall positive environmental impacts as the project investments will reduce GHG emission, reduce the use of agricultural inputs and associated releases of such inputs into the environment, and improve soil organic carbon contents. The proposed project investments, however, trigger the Bank's two environmental safeguard policies: OP4.01 Environmental Assessment (EA) and OP4.09 Pest

Management. Based on expected environmental impacts of such investments, the project is classified as a *Category B* project.

28. Environmental Assessment (EA) (OP4.01). Financed by counterpart funds, the construction and/or rehabilitation of small scale on-farm agricultural infrastructures (such as irrigation canals and improvement of existing farm roads) under Component 1 will generate potential environmental impacts (noise, air, wastewater, solid wastes etc.) that are short-term, temporary, limited and local in nature, and can be readily managed with cost effective mitigations measures. Environmental Codes of Practice (ECOPs) have been prepared for such investment in accordance with the Bank environmental safeguard requirements.

29. Pest Management (OP4.09). The project will promote Integrated Pest Management (IPM) practices and will support the review and development of technical codes and standards related to applications of agricultural inputs (including pesticides) in CSA practices. A Pest Management Plan (PMP) has been prepared for the rice, wheat and corn production at the project sites. The potential impacts are environmentally positive as the project aims to reduce the use of pesticides and fertilizers.

30. Public Consultation and Disclosure. In accordance with the Bank safeguard policies and Chinese EA regulations, public consultations have been conducted with project farmers and other stakeholders through meetings and on-site surveys and interviews. The opinions and concerns of the people consulted have been taken into account in the safeguard documents and the project design. The project information was disclosed at project villages and government websites. In accordance with the Bank's information disclosure policy, on April 24, 2014 the ECOPs and PMP were made available in the project areas and on the websites of MOA and the local agricultural bureaus, and are accessible at PMO and PMUs. The ECOPs, PMP were first disclosed at the World Bank InfoShop on May 8, 2014. Final versions of ECOPs and PMP were disclosed at the World Bank InfoShop on May 26, 2014.

ANNEX 1: RESULTS FRAMEWORK AND MONITORING

Country: China

Project Name: Climate Smart Staple Crop Production (P144531)

Results Framework

Global Environmental Objectives

PDO Statement

The proposed project's Project Development Objective (PDO) and its Global Environmental Objective (GEO) is to demonstrate climate smart and sustainable staple crop production in Huaiyuan County of Anhui Province and Yexian County of Henan Province.

These results are at	Project Level

Global Environmental Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection
				YR1	YR2	YR3	YR4	YR5			
Reduced GHG Emission (CO2 equivalent)	☐	Metric ton	0	900	2,800	6,300	11,900	21,000	Semi-annual	Independent Monitoring reports	PMO
Increase in Carbon Sequestration (CO2	☐	Metric ton	0	1,700	5,500	12,500	24,000	44,000	Semi-annual	Independent Monitoring reports	PMO

equivalent)											
Change in average crop yield	☐	%	0	2%	3%	5%	7%	8%	Semi-annual	Monitoring Reports	PMO and county PMUs

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection
				YR1	YR2	YR3	YR4	End Target			
Crop production areas adopted project promoted practices	☐	Hectare(Ha)	0	600	1,000	2,000	3,000	4,000	Semi-annual	Monitoring Reports	PMO and county PMUs
Reduction in inputs – fertilizer	☐	Ton	0	20	80	180	300	500	Semi-annual	Monitoring Reports	PMO and county PMUs
Reduction in inputs – pesticides	☐	Kg	0	20	40	60	80	100	Semi-annual	Monitoring Reports	PMO and county PMUs
Reduction in inputs – water	☐	'000 M^3	0	0	0	100	500	1,000	Semi-annual	Monitoring Reports	PMO and county PMUs
Area serviced by professional	☐	Hectare(Ha)	0	300	800	1,200	2,000	3,000	Semi-annual	Monitoring Reports	PMO and county PMUs

service providers with new CSA techniques											
Number of farmer field schools under proper operation	☐	Number	0	11	24	30	30	30	Semi-annual	Monitoring Reports	PMO and county PMUs
Change in average net staple crop production income	☐	%	0	2%	5%	8%	10%	12%	Semi-annual	Monitoring Reports	PMO and county PMUs
Client days of training provided (number)	☒	Number	0	12,000	14,000	17,000	20,000	25,000	Semi-annual	Monitoring Reports	PMO and PMUs
Client days of training provided - Female (number)	☒	Number Sub-Type Breakdown	0	5,500	7,000	8,000	10,000	12,000	Semi-annual	Monitoring Reports	PMO and PMUs
Policy documents developed	☐	Number	0	0	0	3	4	5	Semi-annual	Monitoring Reports	PMO

Clients who have adopted an improved agr. technology promoted by the project	☒	Number	0	2,500	6,000	10,000	15,000	25,000	Semi-annual	Monitoring Reports	PMO and county PMUs
Clients who adopted an improved agr. technology promoted by project – female	☒	Number Sub-Type Breakdown	0	1,500	3,500	5,500	9,000	14,000	Semi-annual	Monitoring Reports	PMO and county PMUs

ANNEX 2: DETAILED PROJECT DESCRIPTION

CHINA: Climate Smart Staple Crop Production (P144531)

1. **Overview of the Project Area**. The two project counties, Huaiyuan and Yexian, are located in the main staple crop production region of China. The table below shows basic geographic, climatic and economic information of the two counties. It is noted that the local climate has become hotter (increased around 0.7^{o}C) and wetter over the last 50 years with more frequent extreme climate events (droughts and floods) in recent years. Local governments expect that a warm climate will bring both positive and negative impacts on crop production as warm climate will extend crop growth periods while it will also lead to increase in pests, weeds and crop diseases.

Table 2-1: Basic Information of Huaiyuan and Yexian (2011)

Counties	Total Area	Location	Population (million)	Climate	Annual average		GDP (billion RMB)	
					Precipitation	^{o}C	Total	Agriculture
Huaiyuan	2,384 km^2	N32°43′-30°9′; E116°45′-117°19′	1.37	Sub-tropical, humid monsoon	910 mm	15.8	16.7	51.8%
Yexian	1,387 km^2	N33°21′-33°46′; E113° 07′-113°37′	0.88	Temperate, semi-humid monsoon	780 mm	14.8	15.3	59%

2. In terms of crop production, Huaiyuan has an annual wheat planting area of around 10,000 ha and an annual rice planting area around 50,000 ha. The average rice yield was 7,697kg/ha and wheat yield was 5,973kg/ha. With regard to agricultural inputs, fertilization intensity was about 458kg/ha in 2009, much higher the national average of 351kg/ha. In 2009.diesel consumption of Huaiyuan was relatively stable at about 82 liters/ha, while the pesticide consumption increased 9% from 2005 to 2009 to 6.8kg/ha.

3. Yexian has an annual wheat production area of about 55,000 ha and an annual corn production area about 50,000ha. In 2011, the average wheat yield was 5,195kg/ha and corn yield was 5,366kg/ha. Compared to Huaiyuan, Yexian had a much higher fertilization intensity of 632.5kg/ha, used more diesel for crop production at 88.9 liters/ha, but applied less pesticides at 3.95kg/ha due to the fact that rice production is generally affected by more diseases and pests than other staple crop production.

4. Project Area. In Huaiyuan, the project will support 12 villages of two townships (Lanqiao and Wanfu) with 9,621 households, a total population of 44,510 and a cropland area of about 5,550 ha. In Yexian, the project will support 28 villages of two townships (Longquan and Yeyi) with 10,153 households, a total population of 40,728 and a cropland area of about 3,480 ha. It is officially reported that in 2013 there are 994 households in Huaiyuan project villages and 1,485

households in Yexian project villages are living below the national poverty line (extreme poverty).

5. During the project preparation, SA surveyed 280 randomly selected farmer households and collected data on their socioeconomic status and crop production activities. Corresponding soil data was collected through soil sampling on the croplands of surveyed farmers and from villages and county soil bureaus. The results of the baseline survey showed that:

- Crop production is dominated by smallholders and that the average cropland area per household is 0.33 ha.
- About 60% and 41% of labors are migrant workers in Huaiyuan and Yexian project villages, respectively. For the remaining rural labors, over 59% are female farmers and over 55% are farmers old than 50 years. About 80% of rural farmers have only middle school education.
- On average, farm incomes account for about 47% of the total rural household incomes for project farmers of Huiyuan County but only about 26% for project farmers of Yexian County.
- Smallholder production practices lead to high consumption of energy and agricultural inputs.
- Professional services are mostly provided by private machinery operators and limited number of agricultural machinery cooperatives. These services are currently limited to sowing and harvesting. Inadequate and incompatible machinery has prevented the service providers from providing high standard services.
- Reduced tillage has been widely practiced in Yexian due to availability of private machinery services with no-till combine harvesters. However, CA practices are non-existent in Huaiyuan. It is noted that Huaiyuan has not identified a feasible option (financially and technically) to properly manage its crop residues. As a result, crop residues in Huaiyuan are burned on site, contributing to China's serious air pollution issues.
- Aging hydraulic and farmland facilities provide limited protection to crop production under extreme weather conditions.
- Soil fertility has been decreasing significantly due to heavy reliance and over application of inorganic fertilizers (in particular nitrogen fertilizers); and
- Wasteful irrigation practice reduces water use efficiency, causes high energy consumption, and causes non-point pollution.

6. The procedures for establishing the baseline followed the methodologies and guidance approved under the United Nations Framework Convention on Climate Change and voluntary standards. The project boundary includes the cropland areas of farmers under the two cropping systems in the two project counties. Stratification of the baseline was done and baseline strata were identified based on the criteria of cropping system, farm type and soil type. The baseline investigation confirmed that the baseline GHG emissions are from N_2O emissions from fertilization, methane and N_2O emissions from rice paddy, N_2O and methane releases from burning of crop residues, and CO_2 emissions from crop production related fuel combustion. Based on the M&E methodologies adopted for the project, it is estimated that the baseline GHG

emission from the project area amounts to about 25,000 t CO2-eq and the baseline soil carbon of the project area amounts to about 830,000 t CO2-eq.

7. Provincial Efforts on Climate Mitigation and Adaptation. Both Henan and Anhui Provinces have developed their climate change action plans.[4] For crop production, the two provinces' action plans highlighted key measures for climate mitigation and adaptation. Mitigation measures include (a) low emission and high yield crop production techniques; (b) soil testing based formula fertilization; (c) crop residue retention and no tillage techniques; and (d) efficient agricultural equipment and machinery. Adaptation measures include (a) rehabilitation of irrigation infrastructure; (b) water saving production techniques; (c) breeding of stress resistant varieties; (d) pest monitoring, early warning and management; (e) increase in soil organic carbon; and (f) diversification of cropping systems.

8. **Component 1: CSA Demonstration**. This component will support (a) demonstration of GHG emission reduction and efficient irrigation techniques; (b) demonstration of carbon sequestration techniques; (c) new production technique pilots; (d) technical support for CSA demonstration; and (e) monitoring and evaluation (M&E). For Subcomponents 1(a) and 1(b), relatively mature technologies will be adopted at a large scale while technologies under Subcomponent 1(c) will be piloted first at a small scale and then scaled up selectively based on actual pilot results. This component is expected to be implemented in about 6,500 hectares (ha) covering the rice/wheat cropping system in 12 villages in Huaiyuan County of Anhui Province and the wheat/corn cropping system in 28 villages in Yexian County of Henan Province.

9. Selection of CSA technologies under Sub-components 1(a), 1(b) and 1(c) and technical support under Sub-component 1(d) are based on (a) the baseline data on production practices of the two cropping systems, including challenges faced by project farmers in their current crop production practices and specific demands of these farmers for project participation; (b) applicable CSA technologies for the cropping systems; (c) technical capacity of local stakeholders (project farmers, agriculture officials, technical experts, extension service technicians, and service providers) in the two project counties; (d) existing government programs on climate mitigation and adaptation; and (e) results of extensive stakeholder consultations. As there are strong governmental programs on variety selection at the provincial level, MOA and the two project counties elected not to include such activities under Component 1 and focus this component on county level interventions only.

10. Sub-component 1(a) Demonstration of GHG Emission Reduction. This Subcomponent also supports (i) appropriate dose, formulation and placement of fertilizers in soil for demonstrating high fertilizer use efficiency; (ii) promotion of high efficiency sprayers and professional pest management services; and (iii) efficient irrigation practices that promote water and energy savings in rice and wheat and lower GHG emission in rice production. For (i) – fertilizer use efficiency, the project will support the government's efforts to promote the use of formula fertilizers based on the results of soil testing and nutrient needs of crops during different growth periods. Formula fertilizers will be provided to the project farmers with grant subsidies. In addition, the project will support competitively selected private agricultural machinery

[4] Henan Provincial Government (2013), Henan Climate Change Action Plan for the 12th Five Year Period. Anhui Provincial Government (2010), Anhui Climate Change Action Plan.

operators and cooperatives to demonstrate mechanized deep fertilization techniques for top dressing. The selected service providers will receive government subsidies for the purchase of agricultural machinery and grant support for their service. The project will assist beneficiaries to incorporate weather information to ensure efficient use of fertilizers. These activities are expected to reduce inefficient fertilizer use and GHG emissions associated with it.

11. For (ii) – high efficiency sprayers, the project will provide grant subsidies to farmers for purchase of high efficiency sprayers. In addition, the government will provide subsidies to promote IPM services provided by professional pest management service providers in the project areas. Pest monitoring and early warning information will be provided to project farmers to ensure timely and proper implementation of pest management activities. It is expected that these activities will help reduce the use of pesticides and negative environmental impacts associated with their use. In addition, IPM practices are expected to improve the resilience of the cropping system to pest pressure and promote natural enemies of pests in the long run.

12. For (iii), the project will demonstrate efficient irrigation practices for rice production in Huaiyuan and wheat production in Yexian. Specifically, the two project counties will provide counterpart funding to rehabilitate farm irrigation systems and related infrastructure, which will tap water from river systems. In addition, water saving practices (alternative wetting and dry and laser leveling) will be demonstrated in Huaiyuan with grant support to improve irrigation efficiency and minimize GHG emissions from rice production. In Yexian, the water saving practices are expected to optimize water use and irrigation schedule. In addition, the project grant will support one project village in Yexian to change from diesel powered to electricity powered water pumping to improve energy efficiency. These activities are expected to improve the project area's capacity to cope with and adapt to extreme weather conditions.

13. Sub-component 1(b) Demonstration of Carbon Sequestration Techniques. This subcomponent will support (i) retention of crop residues; and (ii) tree planting around croplands. For (i) – retention of crop residues, the project will provide grant and government subsidies to competitively selected service providers to support them to demonstrate the retention of crop residues with a focus on rice straw management in Huaiyuan and improved stalk shredding with large machinery in Yexian. In addition, the selected service providers will qualify for government subsidies to purchase agricultural machinery. For (ii) – tree planting, counterpart funding from both project counties will support tree planting around croplands in the project area. By increasing soil organic carbon and integrate trees into cropping systems, it is expected that the cropping system's capacity to cope with extreme weather condition will be improved.

14. Sub-component 1(c) New Production Technique Pilots. This subcomponent will support (i) pilot applications of new inputs; (ii) piloting of new production systems; and (iii) piloting of new CA production techniques. For (i) on applications of new inputs, biochar produced from wheat straw and corn straw as soil amendment will be piloted at a small scale in Huaiyuan and Yexian respectively. In addition, for rice production in Huaiyuan, new fertilizers (sulfur, slow release fertilizers, etc.) and methane inhibitors (ferrous oxide, calcium carbonate, etc.) will be applied on a pilot basis to examine their impacts on rice yield, methane emissions and soil characteristics to demonstrate the optimal application methods and doses of these chemicals. Similarly, new fertilizers (slow release fertilizers, etc.) and nitrous oxide inhibitors (3,4-

dimethylpyrazole phosphate) will be applied on a pilot basis to assess their impact on wheat production in Yexian.[5]

15. For (ii) – piloting of new production systems, the project will support crop rotation in two provinces. In Yexian, one rotation option, wheat-soybean-wheat-corn, will be piloted in place of the current wheat-corn system. In Huiyuan, one rotation option – rice-wheat-rice-rapeseed – will be piloted in place of the current rice-wheat system. Both pilots will be examined in terms of their impacts on crop productivity, GHG emissions, and soil characteristics. Results of the pilots are expected to help identify rotation options and promote alternative cropping systems that can improve soil fertility and better respond to the changing climate. In addition to crop rotation, Huaiyuan County will support a pilot of rice-fish farming to demonstrate the economic, environmental and mitigation benefits of this ancient practice in the context of intensive rice production.

16. For (iii) – piloting of new CA production techniques, the project will support pilots of CA practices for the wheat-rice cropping system in Huiyuan and improved retention of corn stalks and no-till wheat planting techniques in Yexian. Activities in Huiyuan will focus on the adoption of CA practices for the entire production cycle of the cropping system as the county has no successful experience on such practices. In Yexian, the focus will be on improvements to the existing CA practices. Successful pilot of these CA techniques will help strengthen the cropping systems' resilience to the changing climate.

17. Sub-component 1 (d) Technical Support for CSA Demonstration. This subcomponent will support (i) a national expert group (NEG); (ii) technical services and training; and (iii) farmer field schools. For (i) – national expert group, the project will recruit a number of national technical experts on crop production – rice, corn, wheat, soil and fertilization, plant protection, agronomy and agricultural machinery – and monitoring of GHG mitigation activities. These experts will be tasked to advise PMO and PMUs on technical issues related to CSA demonstration, including but not limited to guiding the implementation of CSA techniques in the two project counties, providing necessary training to local experts and extension service technicians on key production techniques, reviewing and evaluating CSA demonstration results, and proposing technical adjustments as needed.

18. Under (ii) – technical services and training, extensive media outreach will be performed to disseminate project information to participating farmers.[6] In addition, a number of extension service centers (soil and fertilization, plant protection, agronomy and agricultural machinery) in the two project counties will be mobilized through implementation agreements with the respective PMUs. These centers will provide tailored technical support and training through farmer field schools to be established under Subcomponent 1(d)(iii) to help the project farmers and professional service providers (such as machinery operators and cooperatives) to learn and implement CSA techniques promoted under the project. The soil and fertilization centers will provide expanded soil testing services in the project area, carry out field training on water and

[5] Dicyandiamide has been also tested in China. However, it will not be used under the project due to its health concerns.

[6] Based on the SA results, project information will be broadcasted on the most effective media outlets - local TV and radio channels.

soil nutrient management, and technical consultations as needed. Plant protection centers will increase their pest and weed monitoring efforts in the project area, recommend pest and weed control measures in a timely manner, train farmers and professional service providers on pest management and the use of new sprayers, and provide technical consultations as needed. Furthermore, agronomy and agricultural machinery centers will carry out field training to guide crop production practices and machinery operations and provide technical consultations as needed. Based on the performance of these centers, their incremental operating costs for Component 1 implementation will be supported by the project.

19. Under (iii), the project will support the establishment and operation of farmer field schools in the project villages. Education toolkits and incremental training costs will be provided to the project villages. Based on lessons learned from similar schools in Indonesia, the farm field schools under this project will focus on high priority topics and carry out training activities with simplified information presentation based on the actual demands and capacity of project farmers participating in the schools.[7] It is expected that these schools will serve as a technical support platform to link project farmers with extension service centers and technical experts. Training activities performed through this platform are expected to steer farmers' production behaviors towards sustainable CSA techniques promoted by the project. Feedback from these farmer field schools is expected to help the PMUs and PMO to monitor and evaluate the performance of the extension service centers and technical experts in the delivery of services and advisories to project farmers.

20. Sub-component 1(e) M&E. This subcomponent will support (i) CSA M&E; (ii) social impact monitoring; (iii) environmental safeguard monitoring; and (iv) management of project data and information based on a geographic information system (GIS). All activities will be performed by independent consultants. To measure project impacts, the design of (i) and (ii) M&E activities is consistent with the approach for baseline assessment to ensure that project impacts can be measured consistently. In addition, control groups will be identified and monitored for Activities (i) and (ii) to ensure observed changes in results indicators are the result of project impacts.

21. For (i) on CSA M&E, the project will monitor GHG emissions and removals by sinks to demonstrate the GHG mitigation impacts of demonstrated CSA technologies, monitor crop productivity to evaluate the changes in average crop productivity and net agricultural incomes of project farmers as a result of project implementation, and monitor environmental and institutional variables to demonstrate resilience of cropping production systems to climate related variability. The project's M&E methodologies and indicators for GHG emissions and removals by sinks are developed based on:

- Clean Development Mechanism approved methodology: AMS-III.AU: Methane Emission Reduction by Adjusted Water Management Practice in Rice Cultivation - Version 3.0 (for quantification of methane emissions from rice);
- Verified Carbon Standard approved methodologies: VM0021: Soil Carbon Quantification Methodology, Version 1.0 (for quantification of soil carbon

[7] Feder, G., R. Murgai, J. Quizo, 2013. Sending Farmers Back to School: The Impact of Farmer Field Schools in Indonesia. World Bank Policy Research Working Paper 3022.

sequestration); and VM0022: Quantifying N2O Emissions Reductions in Agricultural Crops Nitrogen Fertilizer Rate Reduction – Version 1.0 (for quantification of emissions from fertilizer use); VM0026 : Methodology for Sustainable Grassland Management, Version 1.0 (for quantification of emissions from biomass burning); and

- China NDRC approved methodology: Forest Management Carbon Sink Project Methodology, Version 01 (for quantification of GHG removes by sinks from agroforestry).

22. Besides these methodologies, the 2006 Guidelines for National GHG Inventories of the Intergovernmental Panel on Climate Change (Volume 4: Agriculture, Forestry, and Other Land Use) and models (e.g. DeNitrification-DeComposition Model, RothC/Century Model) as relevant will be adopted to the project context.

23. On crop productivity, the project will monitor the changes in average net agricultural income and change in average crop yield through surveys of project farm households. The sampling approach and procedures to be followed by the survey will be similar to those followed in the baseline survey. For resilience, the project will monitor SOC comparing to the baseline results. In addition, areas serviced by professional service providers with new CSA techniques and number of farmer field schools under proper operation will be monitored to measure institutional resilience of crop production in the two project counties.

24. M&E activities under the items (ii), (iii) and (iv) are self-evident. For (ii), the project will support the independent social assessment to evaluate project's social impacts on project farmers, including those on female farmers and poor households. In addition, implementation of social safeguard measures, if any, will be closely monitored as part of the independent social assessment task. Feedback from project beneficiaries will be collected and analyzed to guide future implementation. For (iii), the project will support environmental safeguard monitoring based on the agreed environmental management and pest management plans. For (iv) – project information management, the project will support the use of a GIS based system to support systematically collection, organization, storage, analysis, and spatial representation of and the project data and information.

25. **Component 2: Policy Development and Knowledge Management.** This component will support (a) development of national CSA policies, strategy and guidelines; (b) provincial and national level dissemination of project knowledge; and (c) promotion of international CSA cooperation.

26. Sub-component 2(a): Development of National CSA Policies, Strategies and Guidelines. This sub-component will support the study and development of (i) the national CSA policy and strategy; (ii) the integration of CSA concepts into China's food security strategy; (iii) two CSA guidelines for staple crop production; and (iv) a methodology for quantification of GHG mitigation associated with implementation of CSA technologies and practices in staple crop production in China. The first study on China's CSA policy and strategy will examine how existing agricultural policies can be adjusted and optimized to support CSA adoption and dissemination. This study will also examine whether an ecological compensation scheme can be

developed to sustain project support to promote climate smart crop production nationally. It will also propose strategies to support MOA to continue its efforts to screen, assess, pilot and disseminate future CSA techniques.

27. The second study under this sub-component will support MOA to examine how CSA concepts can be integrated into China's food security strategy to shift the government's attention from "quantity" to both "quantity" and "sustainability". In particular, the study will use the verified impacts of CSA techniques on crop yields and GHG emission reduction and carbon sequestration that have been demonstrated by this project to showcase how crop production intensification can be done in a sustainable manner while food security is not negatively affected.

28. Based on the verified results of the project promoted CSA techniques at the two project counties, this sub-component will support MOA to develop two national technical guidelines on how to carry out climate smart production for wheat-corn and wheat rice cropping systems. For (iv), the project will support the development of a baseline and monitoring methodology for quantification of GHG mitigation associated with implementation of CSA technologies and practices in staple crop production in China's context. This methodology will be submitted to NDRC for its review and approval. With endorsement from NDRC, the approved methodology can be used to promote domestic carbon offset projects that implement CSA technologies in staple crop production, and facilitate the scale up of mitigation actions in China's staple crop production with CSA technologies and practices.

29. Sub-component 2(b): Provincial and National Dissemination of Project Knowledge. The project will support the documentation of lessons learned and development of a project website as a knowledge exchange platform to help project beneficiaries and stakeholders access project information. Project newsletters and promotional materials will be prepared to disseminate progress and results of project implementation as well as successful experience and lessons learned under this project. In the two project provinces, dissemination activities will be organized to educate farmers and extension service technicians from non-project townships surrounding the project areas, to other areas of the two project counties, and eventually to the rest of the province. Project experience will also be disseminated nationally through the MOA network.

30. Sub-component 2(c): Promotion of International CSA Cooperation. The project will support MOA participation in related international CSA and GEF climate mitigation events to learn from international best practices as well as to present this project's results internationally. This will include at least two international CSA workshops organized by MOA under this project. In addition, this project will facilitate MOA to expand its CSA cooperation with the Bank and other international organizations.

31. **Component 3: Project Management**. This component will support project implementing agencies to manage, implement, supervise and monitor project implementation.

ANNEX 3: IMPLEMENTATION ARRANGEMENTS

CHINA: Climate Smart Staple Crop Production (P144531)

Project Institutional and Implementation Arrangements

1. For preparation and implementation of this project, MOA has set up the following institutional structure at the national level.

- National Project Steering Committee (NPSC). The NPSC is led by MOA with participation of the Leading Group of Poverty Alleviation and Development of the State Council, NDRC, and the Ministry of Finance (MOF), Ministry of Science and Technology and the Ministry of Environmental Protection, and All-China Women's Federation. The NPSC will hold annual meetings to review project implementation progress, discuss and endorse the next year's implementation plan, and make decisions on major adjustments in project implementation.
- National Project Director (NPD). MOA has appointed a Deputy Director General (DDG) of its Science, Technology and Education Department as the project's NPD. On behalf of MOA, the NPD will be in charge of the implementation of this project.
- PMO. Under the leadership of the NPD, the PMO manages project implementation. It will support the NPD to coordinate all stakeholders to carry out project activities according to the agreed implementation plans. It assists the NPD and the PSC in reviewing project implementation issues and making decisions. Its key staff members include a FM specialist, a procurement specialist, and an M&E/safeguards specialist.
- National Expert Group (NEG). Under Subcomponent 1(d)(i), a NEG will be set up to provide technical support to the implementation of CSA demonstrations.

2. The two project provinces – Henan and Anhui – have set up the following institutional structure for project implementation in the respective province.

- Provincial Leading Group (PLG). In two project provinces, a provincial leading group led by the Department of Agriculture (DOA) has been established with participation of related provincial agencies. Led by a DDG of DOA, the PLG will coordinate and supervise project implementation in its province, ensure the timely delivery of provincial commitments, and adoption and scaling up of policy measures developed and technical measures demonstrated under the project.
- Provincial PMU. Each project province has set up a provincial PMU under the Office of Rural Energy and Environmental Protection of the provincial DOA. The provincial PMU support the PLG to coordinate project implementation in the province.
- County Leading Group (CLG). Led by a deputy county head in charge of agriculture, each of the two project counties has set up a CLG with participation of Bureaus of Agriculture, Finance and Water Resources, Office of Poverty Alleviation and Women's Federation. CLG coordinates and supervises project implementation in the respective county. CLG will ensure timely provision of county cofinancing and wide adoption of project promoted policies and crop production techniques outside of the project areas.

- County PMU. Led by the director of Agriculture Bureau of each project county, the county PMU manages project implementation in the respective project county and provides technical supports to the CLG in key decision-making process.

3. Project implementation arrangements are detailed in the Project Implementation Manual (PIM). Specifically, MOA, through its PMO, will be responsible for overall implementation of this project. It will directly manage implementation of Subcomponents 1(c)(ii), 1(d)(1) and 1(e), and Components 2, 3 and 4. For remaining activities under Component 1, the two project counties through their respective county PMUs, will identify project beneficiaries, confirm project activities at specific project sites, provide extension services to support project beneficiaries to implement such activities, report local adoption of project promoted crop production technologies/practices, verify on-the-ground project outputs, and ensure timely disbursement of project subsidies to verified project beneficiaries.

Financial Management, Disbursements and Procurement

Financial Management (FM)

4. The FM capacity assessment identified the following key risks: (a) the financial staff of the MOA PMO and two county PMUs are new to the Bank's operations; and (b) the internal control procedures designed for Component 1 might not be followed strictly by the involved entities. Agreed mitigation measures to address the above risks include: (a) financial management training (formal and ad hoc) to be provided to the project financial staff; (b) an FM Manual (FMM) to be prepared as part of the Project Implementation Manual (PIM) to state clearly the responsibility of each involved entity and standardize project implementation procedures; and (c) close monitoring and supervision from the Bank team and the PMO during project implementation. Overall, the residual financial management risk after mitigating measures for the project is assessed as *Moderate*.

5. Budgeting. The annual project implementation plan, including the funding budget and resources, will be prepared by the PMO and two county PMUs and then be consolidated by the PMO. Budget variance analyses will be conducted regularly by the PMO and PMUs providing timely information to related government entities and the Bank on project execution thus enabling timely corrective actions.

6. Funds Flow. The GEF grant will flow from the Bank into a project Designated Account (DA) to be set up at and managed by the MOF. MOF will be directly responsible for the management, maintenance and reconciliation of the DA. The county PMUs are responsible for preparing disbursement withdrawal applications (WAs) as well as the supporting documents for activities managed by them and submitting to the PMO for review and approval. The PMO is responsible for preparing disbursement WAs as well as the supporting documents for national level activities. Finally WAs will be reviewed and approved by MOF. After that, MOF will transfer the required funds to the PMO and County Finance Bureaus to reimburse these entities for payments made with their own resources. MOF can also pay the contractors/suppliers directly based on the PMO's request. MOF will prepare and send a WA to the Bank to replenish the DA as needed.

7. Accounting and Financial Reporting. The "Accounting Regulations for Trust Funds" stipulated by MOF will be used in the project. The format and content of financial statements, which is listed below, will be used for project financial reporting.

- Balance sheet of the project;
- Statement of implementation of grant agreement;
- Statement of designated account; and
- Notes to the financial statements (required only for annual financial statements).

8. The MOA PMO and county PMUs will manage, monitor and maintain the project accounting records for the activities they execute. Project activities will be recorded manually by the PMO and PMUs. Given the accounting regulation for trust funds is simple and transaction volume is not high, manual accounting registers is deemed an acceptable approach for this project. In addition, all project financial personnel have the requisite accounting education background and related working experience. Original supporting documents for project activities will be retained by the PMO and PMUs respectively. The PMO will consolidate project financial statements prepared by the PMUs, which will then be submitted to the Bank for review and comment on a regular basis. The consolidated interim unaudited project financial statements should be prepared and furnished to the Bank by the PMO no later than 45 days following each semester (due dates will be August 15 and February 15), in the form and substance satisfactory to the Bank.

9. Internal Control. All WAs are subject to MOF's detailed review. An internal control system has been established in each entity by following related internal control standards issued by MOF. The main internal control requirements for this project have been included in the FMM.

10. An output based disbursement mechanism will be used for those activities to be managed by the project counties. Based on the agreed project design, the PMUs will sign implementation agreements with project villages, related agricultural extension service centers, and competitively selected crop production service providers. The contents of agreements should include, but not limit on, the following areas: (a) project activities to be implemented; (b) agreed implementation arrangement; (c) main technical criteria; (d) roles and responsibility of each party involved; (e) expected outputs and results; (f) grant or subsidy corresponding to each output; (g) monitoring, reporting and verification arrangements; (h) grant disbursement arrangements; and (h) non-compliance and dispute resolution arrangement.

11. Project villages, competitively selected service provides and related agricultural extension service centers are responsible for implementing project activities in line with the required procedures. Once the activities have been completed, the PMUs will conduct their output verification. The pre-determined grant payments will be delivered to project villages, the service providers and related extension service centers if the PMUs are satisfied with the outputs and activities completed. The certificate issued by the PMUs will be the only supporting document for project disbursement and accounting purposes. The detailed procurement and disbursement arrangements for the above mentioned activities are listed in Table 3.1 below.

12. Auditing. China National Audit Office (CNAO) has been identified as the auditor for the project. CNAO has extensive, satisfactory experience in auditing Bank-financed projects. An annual audit report will be issued by CNAO. The annual audit report of project financial statements will be due to the Bank within 6 months after the end of each calendar year. Following the World Bank's formal receipt of the audited financial statements from the borrower, the World Bank will make them available to the public in accordance with the World Bank Policy on Access to Information.

Table 3.1: Output Based Disbursement Arrangements

Activity	**Financing Sources**	**Disbursement Category**	**Note**
Demonstration of GHG emission reduction and carbon sequestration techniques	WB funds and counterpart funds	Grants and subsidies under Component 1 of the project.	Pre-determined subsidy will be delivered to villages, service providers, and extension service centers once the required outputs are achieved and verified by the PMUs.

Disbursements

13. Three disbursement methods: advance, reimbursement and direct payment are available for the project. The primary Bank disbursement method will be advances to the DA. Withdrawal Applications (WAs) will be prepared to request Bank disbursements and to document the use of Bank financing. WAs will include supporting documents in the form of Statement of Expenditures (SOEs) and Summary Sheets and source documents identified in the Disbursement Letter issued by the Bank. The Funds Flow description above provides additional related information.

14. A segregated DA in US dollars will be opened at a commercial bank acceptable to the World Bank and will be managed by MOF. The ceiling of the DA will be determined and documented in the Disbursement Letter.

15. The GEF grant would be disbursed against eligible expenditures (taxes inclusive) as in the following table:

Table 3.2: Disbursement Categories

Disbursement Categories	GEF Grant	
	Allocated amount (US$)	Percentage of Eligible Expenditures to be financed (%)
(1) Grants and Subsidies under Component 1 of the Project	1,936,000	100% financed
(2) Goods, non-consulting services, consulting services, training and workshops and incremental operation costs	3,164,000	100%
Total	5,100,000	

16. Sub-grants refer to those activities under Component 1 to be managed by the two county PMUs. The subsidies will be delivered to (a) project farmers, encouraging them to use the advanced technical interventions; (b) agricultural extension service centers (soil and fertilization, plant protection, agronomy and agricultural machinery) to support their incremental operating costs in providing project required technical services to project villages and farmers; and (c) competitively selected service providers that adopt and disseminate project promoted crop production services.

17. The incremental operating costs refer to the expenditures paid for the purpose of project management and implementation based on the approved annual work plans and budgets for office supplies and consumables, office rental, utilities, bank charges, communications, mass media and printing services, interpretation and translation services, vehicle rental/maintenance and insurance, building and equipment maintenance, local transportation, domestic and international travel, lodging and subsistence allowances, and salaries of contractual and temporary project management staff, but excludes the salaries and any salary supplements of government officials.

Procurement

18. Procurement Assessment. The procurement capacity assessment has identified the lack of experience with World Bank financed projects of the procurement staff at the PMO as the principal risk. Mitigation measures include: (a) procurement training provided during project preparation; (b) preparation of a procurement training plan by the PMO to train procurement staff before and during project implementation; (c) preparation of the PIM to specify procurement management arrangements and standardize project procurement procedures to guide project procurement activities; and (d) a procurement agent with experience in World Bank procurement procedures may be recruited by the PMO to assist with procurement planning and implementation. Overall procurement risk is considered 'Moderate'.

19. Applicable Guidelines**.** Procurement will be carried out in accordance with the "*Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans & IDA Credits & Grants by World Bank Borrowers*" dated January 2011; and "*Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers*" dated January 2011; and the provisions stipulated in the Grant Agreement. National Competitive Bidding (NCB) will be carried out in accordance with the *Law on Tendering and Bidding of the People's Republic of China* promulgated by the Order of the President of the People's Republic of China on August 30, 1999 subject to the modifications stipulated in the Grant Agreement in order to ensure broad consistency with World Bank Procurement Guidelines.

20. Procurement of Works. All civil works under Component 1 will be financed by counterpart funding following domestic procurement procedures.

21. Procurement of Goods and Non-consulting Services. Goods to be procured under Component 1 of the project include: (a) two transformers; (b) 200 battery powered sprayers and a tractor mounted boom sprayers; and (c) 30 educational tool kits for the farmer field school. Non-consulting service contracts will be procured for the purposes of (a) public awareness

activities; (b) knowledge management and dissemination activities; and (c) organization of workshop, training and study tours, as needed.

22. Selection of Consultants. Consulting services will be needed for technical support activities under Component 1, technical and policy studies under Component 2, and knowledge management activities under Component 3. Government-owned universities, research centers or other institutions may be included in shortlists of consultants, provided that they possess the relevant qualifications and they are not in a situation of conflict of interest. In such cases, Quality Based Selection (QBS) or CQS (Selection Based on Consultant's Qualifications) (for small assignments) would be used, if the shortlist also includes consulting firms. Single-source selection (SSS) shall be used only in exceptional cases and shall be specified in the Procurement Plan. A sufficiently detailed justification, including the rationale for SSS instead of a competitive selection process, and the basis for recommending a particular firm or individual, will be required.

23. Training and Workshops. Training and workshop plans will be developed by the PMO and included in the project's annual work plan for Bank review. Expenditures incurred in accordance with the approved training and workshop plans will be used as the basis for reimbursement. Any special training or study tour which is not easy to be organized by the PMO or county PMUs may be contracted out to a qualified organizer through non-consulting service procurement.

24. Procurement Plan. A Procurement Plan of project implementation was agreed at the negotiations. The Procurement Plan will be made available in the project's database and on the Bank's external website. In agreement with the Bank, the Procurement Plan will be updated annually and as required to reflect implementation needs and improvements in institutional capacity.

25. Frequency of Procurement Supervision. Prior review supervision will be carried out through the Bank' Beijing Office. Procurement post reviews will be carried out by the Bank or by independent external auditors acceptable to the Bank every 12 months. The post review sampling ratio will be a minimum of one out of fifteen contracts. This ratio will be adjusted periodically during project implementation based on the performance of the project implementing agencies.

26. Procurement Thresholds. The procurement plan and its updates will set forth those contracts which are subject to prior review as well as the procurement methods for specific contracts. Indicative thresholds for procurement methods and Bank prior review are presented below:

Table 3.3: Thresholds for Procurement Methods and Prior Review

Expenditure Category	Contract Value Threshold (US$)	Procurement Method	Prior Review Threshold (US$)
1. Goods and Non-Consulting Services	≥3,000,000 <3,000,000 <100,000 None	ICB NCB Shopping Direct Contracting	All First two contracts First Contract All
2. Consultants Services	≥300,000 <300,000	QCBS/QBS CQS Individual consultant Single source selection (firm) Single source selection (individual)	All first two contracts Only in exceptional cases e.g. long term TA All ≥20,000

27. Retroactive Financing. Contracts for retroactive financing are identified in the agreed Procurement Plan. Prior review will be required for all such activities.

Environmental (including safeguards)

28. As noted, successful implementation of this project will generate positive environmental results on GHG emission reduction, carbon sequestration, and reduction in the releases of agrochemicals to the environment. The Project is classified as a "Category B" project based on the type, location, sensitivity, and scale, as well as the nature and magnitude of project activities and their potential environmental impacts. Two environmental safeguard policies triggered by the project are Environmental Assessment (OP4.01) and Pest Management (OP4.09). OP4.36 (Forestry) and OP4.37 (Dam Safety) are not triggered as (a) the project's tree planting activities is limited to planting windbreak trees around existing cropland areas, which is not expected to affect forest, forest health or forest-dependent communities; and (b) the project will not finance construction or rehabilitation of any dams as defined under OP4.37, and the project financed irrigation activities will not rely on upstream dams or a dam under construction; rather these irrigation systems are drawing water from river systems and existing wells in the project area.

29. EA (OP4.01). The project will be implemented in rural areas with intensive crop production activities. There are no sensitive locations and environmental issues. As noted in the main text, the project will have positive environmental impacts. Environmental impacts related to the construction and/or rehabilitation of small scale on-farm agricultural infrastructures such as irrigation channels and farm roads (e.g. noise, air, wastewater, solid wastes etc.) will be short-term, temporary, limited and local in nature, and can be readily managed with cost effective

mitigations measures. Three ECOPs have been prepared in accordance with the Bank environmental safeguard requirements for the investments on (a) farm road improvement and rehabilitation of irrigation and drainage channels; (b) leveling of agricultural lands; and (c) installation of power line and pumping stations, and tree planting around farm lands. The ECOPs will be included into the bidding documents and civil work contracts.

30. ECOPs are prepared based on national norms, proven practices in other Bank financed projects and practices recommended in Environmental Health and Safety Guidelines of World Bank Group. They specify all aspects of environmental management issues during the entire project cycle, including but not limited to, site preparation, construction dust management, air pollution control, noise impact control, water pollution control, solid wastes management, public and workers' health and safety, as well as public consultations on the environmental issues. It also includes the reporting and supervision arrangements for the project implementation. With proper implementation of the proposed mitigation measures, the potential adverse impacts will be avoided, eliminated entirely, minimize or mitigated to an acceptable level.

31. Pest Management (OP4.09). The project will promote IPM practices at the project site and will support the review and development of technical codes and standards related to applications of agricultural inputs (including pesticides) for climate smart staple crop production. A PMP has been prepared for the production of rice, wheat and corn in the two project counties. It includes major pest issues, pesticide management methods, monitoring and evaluation activities, and capacity building for project stakeholders. It incorporates the existing good pest management practices from the project areas, it outlines IPM based pest control and management methods, and recommends various application approaches under different conditions such as: promoting IPM to reduce the use of toxic pesticides, e.g. improvement of pest forecasting, use of bait lamps, crops rotation, pest resistant varieties, and balanced fertilization; training and capacity building for local farmers and governmental agencies; introduce and promote biological and botanical pesticides; strengthening monitoring; It also provides a list of pesticides that may be used under the project in compliance with World Health Organization's recommended categories. Implementation of the training and monitoring programs was budgeted in the project cost.

32. Public Consultation and Information Disclosure. During the preparation process, public consultations and participation including farmers consultation, meetings and interviews, have been conducted with the different key stakeholders of the proposed project. This included persons of different gender, socioeconomic and educational backgrounds, groups, and occupations. Totally about 404 people have been consulted in the ECOPs Preparation process. The project information was disclosed at project villages, and government websites. The majority of those consulted expressed strong support for the project. The ECOPs incorporated countermeasures to address the concerns of the people consulted. Such countermeasures are also fully incorporated into the project design.

33. In accordance with the Bank's information disclosure policy, the ECOPs and PMP were made available in the project areas and on the websites of the local government agencies, and are accessible at PMO and PMUs. Draft ECOPs and PMP were disclosed at the World Bank

InfoShop on May 8, 2014. Final versions of ECOPs and PMP were disclosed at the World Bank InfoShop on May 26, 2014.

Social (including safeguards)

34. RPF implementation: A RPF for the entire project was prepared covering activities financed by GEF fund and counterpart fund, and agreed by the. The RPF was disclosed locally and in Bank Infoshop. Abbreviated RP will be prepared by client in line with the RPF and reviewed by the Bank during the project implementation.

35. Consultation/Participation: The SA has designed a consultation/participation arrangement to be implemented under project implementation. This will ensure the continuity of stakeholder consultation and participation, especially those targeted project farmers. Under the M&E Subcomponent of Component 1, an independent social consultant will be mobilized to carry out this task with an expectation that unbiased consultation will help the project effectively engage targeted project farmers and private sectors in project implementation.

36. Monitoring: Implementation of the RPF will be supervised by the Bank. RPs prepared during project implementation will be monitored and evaluated by an external monitor, the Bank and the county governments. PMOs will be responsible for providing internal resettlement progress report. The Bank's task team and National PMO will jointly monitor and evaluate the emerging resettlement results and corrective actions will be recommended and taken as appropriate and necessary.

37. Gender: The SA identified that female farmers are the main rural labor force with insufficient knowledge on project activities and are key participants of the project. The project will encourage women to participate in the technical activities and training program to improve their capacity. The above-mentioned independent social consultant will also monitor closely gender related actions in the project cycle through two results indicators: numbers of female farmers receiving training and participating in project activities. Together with inputs from other stakeholders, feedbacks from the female farmers will be collected and addressed to improve the quality of project implementation.

Monitoring & Evaluation

38. Annex 1 provides the M&E framework of this project. Based on this framework, Subcomponent 1(e) will support monitoring and evaluation of the results of CSA adoption, the project's social impacts (including social safeguard), and implementation of environmental safeguard measures. The development of a GIS based information system under the same subcomponent will enable the project to systematically collect and process data collected from project beneficiaries. All these activities will be performed by project financed consultants. In addition to these impact M&E activities, the MOA PMO and the two county PMUs will monitor and evaluate project implementation issues routinely. Specifically, the two county PMUs will verify the outputs of various implementation results with project villages and extension service centers with support from the PMO. Such verification results will serve as the basis for disbursing project subsidies to these beneficiaries. The PMO will collect the M&E results from the two PMUs and M&E consultants regularly. The PMO will prepare and submit to the Bank the consolidated M&E report on a semi-annual basis.

ANNEX 4: OPERATIONAL RISK ASSESSMENT FRAMEWORK (ORAF)

CHINA: Climate Smart Staple Crop Production (P144531)

Risks						
Project Stakeholder Risks						
Stakeholder Risk	Rating	Low				
Risk Description: • Limited national stakeholder participation may reduce the visibility and impacts of this project. • Local stakeholders lack interests in project preparation and implementation.	**Risk Management:** • A PSC has been created to coordinate the participation of national stakeholders in project preparation and implementation. • Interests of local stakeholders have been fully incorporated into the project design. Their concerns and interests will be further evaluated and addressed during project implementation.					
	Resp: Client	Status: In Progress	Stage: Preparation	Recurrent:	Due Date: 31-Dec-2013	Frequency: CONTINUOUS
	Resp: Both	Status: In Progress	Stage: Both	Recurrent: ☑	Due Date:	Frequency:
Implementing Agency (IA) Risks (including Fiduciary Risks)						
Capacity	Rating	Moderate				
Risk Description: • The MOA PMO and county PMUs have limited understanding of Bank operations. • Project farmers may not follow technical details required by the project due to lack of understanding of technical requirements.	**Risk Management:** • Training on Bank operations and related financial management, procurement, and safeguards policies and procedures were provided during project preparation and will be provided regularly during implementation. • The Bank team will provide direct guidance on project management issues during project preparation and implementation. • The project will provide strong technical support to project farmers by supporting the creation and operation of farmer field school to ensure their correct understanding of the project's technical requirements.					
	Resp: Both	Status: In Progress	Stage: Both	Recurrent: ☑	Due Date:	Frequency: CONTINUOUS

Governance	Rating	Low				
Risk Description: • Local stakeholders are left out of decision making process as MOA is managing preparation and implementation of this project. • Project grant resources may be misused for unintended purposes.	**Risk Management:** • MOA has a good working relationship with the project provinces and counties. • Local stakeholders have been fully consulted during project preparation and will be consulted continuously during implementation on key decision making issues. • The use of project grant resources will follow agreed financial, procurement and disbursement procedures clearly presented in the PIM. • Use of project funds will be audited as required by domestic policies and by the project. • The Bank team will closely monitor the use of project funds during implementation.					
	Resp: Both	Status: In Progress	Stage: Both	Recurrent: ☑	Due Date:	Frequency: CONTINUOUS
Project Risks						
Design	Rating	Low				
Risk Description: • Project proposed technologies are not properly implemented due to limited knowledge in China. • Lack of proper agricultural machineries to address both project needs and actual production practices of project farmers.	**Risk Management:** • Technology selection has considered both international and domestic best practices and local capacity to ensure technical feasibility of various CSA techniques for either demonstration at a large scale or piloting at a small scale. • Sufficient technical support will be provided to ensure proper understanding and application of the technologies under the project. • Farmer field schools will be established to improve technical capacity of project farmers. • Selection of technologies has considered the market availability of agricultural machineries. • Cooperation with manufacturers of agricultural machineries will be established if needed to ensure supply of specialized machineries to meet project demands.					
	Resp: Both	Status: In Progress	Stage: Both	Recurrent: ☑	Due Date:	Frequency: CONTINUOUS
Social and Environmental	Rating	Low				
Risk Description: • Small-scale and on-farm construction and rehabilitation activities financed by counterpart	**Risk Management:** • The RPF and ECOP have been prepared to guide how such social and environmental impacts associated with these small works will be mitigated. • A PMP has been prepared to promote optimal use of pesticides while achieving sustainable					

<table>
<tr><td>funding may generate short-term, limited, and mitigable environmental and social impacts.
• Pest management activities involve potential environmental and health risks if not properly carried out.</td><td colspan="6">crop yields. In addition, professional pest management services will be promoted whenever feasible.
• Under IPM, no untested species will be introduced.
• Independent social and environmental monitoring will be performed to ensure proper implementation of agreed safeguards actions.</td></tr>
<tr><td></td><td>Resp: Both</td><td>Status: In Progress</td><td>Stage : Both</td><td>Recurrent : ☑</td><td>Due Date:</td><td>Frequency: CONTINUOUS</td></tr>
<tr><td>Delivery Monitoring and Sustainability</td><td colspan="6">Rating Moderate</td></tr>
<tr><td>Risk Description:
• Uptake by farmers in the long run may need continued government support.
• Project monitoring cannot generate reliable data due to weak methodology and/or implementing monitoring arrangements.</td><td colspan="6">Risk Management:
• Policy development supported by the project will help mobilize needed government support to sustain project achievements.
• Best practices on CSA and social and environmental monitoring have been incorporated into the project’s monitoring system.
• Competitive selection of the monitoring consultants will be carried out to ensure qualified consultants will be recruited to carry out the proposed monitoring properly.
• Routine supervision and technical review of monitoring activities will be performed to ensure monitoring quality.</td></tr>
<tr><td></td><td>Resp: Both</td><td>Status: In Progress</td><td>Stage : Both</td><td>Recurrent : ☑</td><td>Due Date:</td><td>Frequency: CONTINUOUS</td></tr>
<tr><td colspan="7">Overall Risk</td></tr>
<tr><td colspan="3">Overall Implementation Risk:</td><td>Rating:</td><td colspan="3">Moderate</td></tr>
<tr><td colspan="7">Risk Description:

Risks identified at the concept stage have been carefully reviewed and mitigated whenever possible. As a result, the risk for implementation is lowered to Moderate at project appraisal.</td></tr>
</table>

ANNEX 5: IMPLEMENTATION SUPPORT PLAN

CHINA: Climate Smart Staple Crop Production (P144531)

1. An implementation support plan was developed for the project taking into account the new technologies to be introduced under the project and the risks identified in the ORAF. The technology to be introduced under the project is relatively new in the project areas and comes with risks in terms of acceptance and subsequent implementation by the stakeholders. The key risks of the project relate to project design and delivery monitoring and sustainability which were both rated as substantial. The support plan would not only proactively identify issues but also ensure that the project remains on track in meeting its development objectives.

2. **Implementation Support.** The implementation support plan will cover the key areas of project implementation, mainly technical, fiduciary, safeguards, monitoring and evaluation and risks. The task team will include staff members with these specializations to participate in periodic supervision missions and provide timely assistance and guidance to the PMU on issues that may arise.

3. Implementation support will cover the following areas:

a. Technical Support: The Bank's project team will include technical staff members who will be able to provide guidance to the beneficiaries on the new technology and respond to issues as they arise. The team includes an agronomist to help in the selection and adoption of technical options necessary for the implementation of project promoted technical interventions.

b. Monitoring: Monitoring by the project team and the government will ensure that the technologies are being undertaken in a sound manner and that technical requirements are being followed. This is critical to ensure success. Based on the agreed Results Framework and the monitoring plan, the Bank team will review and evaluate periodic monitoring reports in order to assess the performance of the new technologies, recommend needed adjustments if any and provide guidance in the use of the monitoring instruments/methods.

c. Safeguards: Safeguard monitoring has been designed as part of the project's M&E subcomponent. The project team will monitor safeguards compliance and respond to issues raised by project proponents.

d. Procurement: Implementation support will be provided to the project to ensure compliance with Bank procurement guidelines. The Bank procurement specialist will provide guidance and conduct post and prior reviews of procurement transactions and ensure that the procurement plans are updated as needed.

e. FM: A FMM has been prepared as a part of the project's PIM to assist the PMU in its day to day operations. The Bank's FM specialist (FMS) will conduct periodic reviews of financial transactions and audit reports to ensure compliance with the FMM and the Bank's fiduciary requirements. The FMS will also provide guidance and advice to the project.

f. Capacity Building. The PMO and the two county PMUs have no prior experience with Bank operation. Training on Bank project management will be provided to the PMO and PMUs to improve their capacity to properly implement the project. On the technical side, training will be provided to PMO and PMU staff and beneficiaries on the new technologies and the monitoring system to be used under the project.

4. An overview of the implementation support plan including skills mix is provided in the tables below:

Supervision Inputs

Time	Focus	Skills Needed	Resource Estimate (sws)
First twelve months	Task Team leadership	TTLs	4 SWs, 2 trips/staff
	Technical	Agronomist	4 SWs, 2 trips/staff
		Monitoring Specialist	4 SWs, 2 trips/staff
	Fiduciary	Bank procurement and FM policies and guidelines	2 SWs, 2 trips/staff
	Safeguards	Bank Environment and social safeguards policies and guidelines	2 SWs, 2 trips/staff
12-60 months	Task and team leadership	TTLs	3 SWs, 2 trips/staff
	Technical support	Agronomist	2 SWs, 1 trip/staff
		Monitoring Specialist	2 SWs, 1 trip/staff
	Fiduciary	Bank procurement and FM policies and guidelines	2 SWs, 2 trips/staff
	Safeguards	Bank environment and social safeguards policies and guidelines	2 SWs, 2 trips/staff

Skills Mix Required

Skills Needed	Number of sws	Number of Trips	Comments
TTL-Environmental Specialist	3 SWs during the first year and 3 SWs annually in the following years	2/year	Washington based
TTL-Agricultural Economist	5 SWs during the first year and 3 SWs annually in the following years	2/year	Beijing based
Agronomist	4 SWs during the first year and 2 SWs annually in the following years	2/year for the first year and 1/year afterwards	Washington based
Monitoring Specialist	2 SWs	2/year for the first year and 1/year afterwards	Washington based
Safeguards Policy	2 SWs	2/year	Beijing based
Procurement	2 SWs	2/year	Beijing based
Financial Management	2 SWs	2/year	Beijing based