



Methane-Reducing and Water-Saving Paddy Rice Program for Results (Hunan) (P178796)

EAST ASIA AND PACIFIC | China | Water Global Practice | Requesting Unit: EACCF | Responsible Unit: SEAW1
IBRD/IDA | Program-for-Results Financing | FY 2023 | Team Leader(s): Xiaokai Li, Guo Li, Si Gou

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Program Development Objectives

Program Development Objective (from Program Appraisal Document)

To reduce methane emissions and support climate resilient rice production in China's Hunan Province.

Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	--	<input type="checkbox"/> Satisfactory
Overall Implementation Progress (IP)	--	<input type="checkbox"/> Satisfactory

Implementation Status and Key Decisions

The Methane-Reducing and Water-Saving Paddy Rice Program was approved by the Executive Directors of the Board of the International Bank for Reconstruction and Development (the World Bank) on May 31, 2023. The World Bank Team and the Government team are working closely towards loan signing which is expected to be at end of October, 2023.

Data on Financial Performance**Disbursements (by loan)**

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P178796	IBRD-95230	Not Effective	USD	255.00	255.00	0.00	0.00	255.00	0%

Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P178796	IBRD-95230	Not Effective	31-May-2023	--	--	31-Dec-2028	31-Dec-2028

Program Action Plan

Action Description	Develop a detailed trainer's manual for training farmers on low-methane rice production				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical	DLI 3	DARA and PPMO	Other	By loan effectiveness	Not Yet Due



Completion Measurement	A copy of the training manual submitted to the World Bank as part of the PIP				
Comments					

Action Description	Develop and issue a provincial MRV standard for carbon sequestration and GHG emission reduction from rice production				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical		PPMO and PDEE	Other	By June 30, 2026	Not Yet Due
Completion Measurement	An MRV standard issued by the responsible provincial authority. It will be developed in coordination with the related activities under the GARR (Hubei and Hunan) Program				
Comments					

Action Description	Prepare detailed implementation plans for carbon trading pilots				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical		CPMOs concerned and PPMO	Due Date	30-Jun-2024	Not Yet Due
Completion Measurement	A copy of the detailed implementation plans for carbon trading pilots submitted to the World Bank				
Comments					

Action Description	Prepare detailed implementation plans for water right trading/buy-back pilots				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical		CPMOs concerned and PPMO	Due Date	30-Jun-2024	Not Yet Due
Completion Measurement	A copy of the detailed implementation plans for water right trading/buy-back pilots submitted to the World Bank				
Comments					

Action Description	Issue an official letter/instruction to implementation agencies to ensure no contract will be awarded to debarred or temporarily suspended firms or individuals				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		PDRC and PPMO	Other	By loan effectiveness	Not Yet Due
Completion Measurement	A copy of the high-level official letter or instruction submitted to the World Bank				
Comments					



Action Description	Include in the TOR for annual external audit the task of randomly selecting awarded contracts to check whether they have been awarded to firms or individuals debarred or temporarily suspended by the World Bank, and ensure Program funds shall be audit				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		PPMO	Other	By loan effectiveness	Not Yet Due
Completion Measurement	A copy of the TOR for the annual external audit submitted to the World Bank as part of the PIP.				
Comments					

Action Description	Use the comprehensive evaluation method for consulting services, subject to the weighting of financial proposal equal to or greater than 70% of the total weighting, while “the lowest evaluated responsive bid” is encouraged as an alternative option				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		PPMO and CPMOs	Other	Throughout Program implementation stage	Not Yet Due
Completion Measurement	Semiannual progress reports submitted to the World Bank, including records on the evaluation methods.				
Comments					

Action Description	Integrate the information on HSFCP funds into the MIS so that all budgetary funds administered by DARA could be managed efficiently				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		DARA and PPMO	Other	Throughout Program implementation stage	Not Yet Due
Completion Measurement	Semi-annual progress reports submitted to the World Bank, including evidence showing that information on the HSFCP funds is integrated in the MIS				
Comments					

Action Description	Regularly inform the World Bank of any credible and material allegations of fraud and corruption in the Program progress reports.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		PPMO and CPMOs	Other	Throughout Program implementation stage	Not Yet Due
Completion Measurement	Semi-annual progress reports containing information on credible and material allegations of fraud and corruption, if any, submitted to the World Bank.				
Comments					



Action Description	Integrate the existing mechanism of prevention and control of schistosomiasis into the Program activities to safeguard health and safety of construction workers & farming operators related to water in the endemic area of Hanshou and Dingcheng.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Environmental and Social Systems		PPMO, Hanshou County, Dingcheng District	Recurrent	Continuous	Not Yet Due
Completion Measurement	Reports of hygienic assessment on schistosomiasis transmission risk prepared; Assessment Reports on snail spread risk prepared; Records of actions timely taken; The implementation of the above actions are reflected in semiannual progress reports				
Comments					

Action Description	Include a specific subsection on environmental and social management in the preliminary design documents for the Program activities				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Environmental and Social Systems		PPMO and CPMOs	Other	Throughout Program implementation stage	Not Yet Due
Completion Measurement	The design documents for the Program activities available for World Bank inspections, include: screening and assessment of E&S risks and mitigation measures in bidding documents; and public consultation documented by township and village committees.				
Comments					

Action Description	For the documentations of non-physical activities with possible downstream adverse impacts (e.g., agricultural water pricing reform, etc.), set out in the relevant TORs requirements on screening and assessment of downstream E&S risks and impacts				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Environmental and Social Systems		PPMO and CPMOs	Other	Prior to carrying out relevant non-physical activity throughout Program implementation stage	Not Yet Due
Completion Measurement	A copy of the TA ToRs submitted to the World Bank, including requirements on screening and assessment of downstream E&S risks; records of farmers and stakeholders engagement; and appropriate mitigation measures and assistance to vulnerable groups.				
Comments					

Action Description	For water rights trading, conduct survey on farmers' affordability and willingness to pay for water use before and during the plan implementation, extensive publicity and public engagement by means of public hearings, mobilizing farmers, and WUAs				
Source	DLI#	Responsibility	Timing	Timing Value	Status



Environmental and Social Systems		PPMO and CPMOs of pilot counties	Other	Throughout the water right trading pilot period	Not Yet Due
Completion Measurement	Documentation available for World Bank inspection: Records on farmers' affordability and willingness to pay; Evidence material of public engagement on water right trading; Record of WUA public hearings; Above actions reflected in semiannual progress				
Comments					

Risks

Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	☐ Low	--	☐ Low
Macroeconomic	☐ Low	--	☐ Low
Sector Strategies and Policies	☐ Moderate	--	☐ Moderate
Technical Design of Project or Program	☐ Substantial	--	☐ Moderate
Institutional Capacity for Implementation and Sustainability	☐ Substantial	--	☐ Moderate
Fiduciary	☐ Substantial	--	☐ Moderate
Environment and Social	☐ Moderate	--	☐ Moderate
Stakeholders	☐ Moderate	--	☐ Moderate
Other	--	--	--
Overall	☐ Substantial	--	☐ Substantial

Comments

The loan for the Program is yet to be effective and implementation has not started.

Results

PDO Indicators by Objectives / Outcomes

Strengthened government management system for sustainable development impacts				
▶ Strengthening government management system for water-saving and low-methane rice production (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	The related strategy, standards and guiding documents need to be developed or revised	--	The related strategy, standards and guiding documents need to be developed or revised.	Four key standards and guiding documents developed and issued for water-



				saving and low-methane rice production
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	Indicated by the issuance of the documents at the provincial level, consisting of four key documents to promote and mainstream water-saving and low methane rice production and incentivize adoption by the rice of farmers the new production technologies and practices in the province.			

Reduced GHG emissions in demonstration counties

► Net GHG emission reduction in demonstration counties (Ton CO2 equivalent) (Metric ton, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	2,396,957.00
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	Indicated by the net GHG emission reductions in six demonstration counties, measured by tons of CO2 equivalent. The net GHG emission reductions are mainly the methane emission reduction through water management, nitrous oxide emission reduction through fertilizer management, and carbon sequestration through straw management and soil fertility improvement.			

Improved irrigation and drainage services for resilient rice production

► Beneficiaries reached with improved irrigation and drainage services in demonstration counties (of whom women) (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	647,500.00
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	Measured by the total number of beneficiaries with access to improved and reliable irrigation and drainage services as defined in the HSFCP designs in six demonstration counties. Beneficiaries are the farmers with access to the improved services.			

□ Female farmers reached with improved irrigation and drainage services in demonstration counties (Number, Custom Supplement)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	316,600.00

Intermediate Results Indicators by Results Areas

Results Area 1: Strengthening management system for sustainable development impacts

► Development/issuance of a provincial water-saving and low-methane rice production strategy and implementation plan (Text, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No provincial strategy and implementation plan	--	No provincial strategy and implementation plan.	The strategy and implementation plan issued
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028



Comments	A provincial water-saving and low-methane rice production strategy and implementation plan developed and issued			
► Development/issuance of (provincial) technical standards for water-saving and low-methane rice production (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No integrated technical standard	--	No integrated technical standard	The integrated standards approved and issued
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	Technical standards for water-saving and low-methane rice production developed and issued, including the standards on low-methane rice varietal selection, water-saving cultivation, fertilizer management, and straw management.			
► Development/issuance of provincial water-saving irrigation quota for rice production (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No irrigation quota for water-saving rice production	--	No irrigation quota for water-saving rice production	The water-saving irrigation quota for rice production approved and issued
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	The irrigation water quota should be updated based on the application of water-saving techniques and the requirements of the most strict water resources management			
► Issuance of a provincial guiding document on water use right trading (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Draft guiding document under preparation	--	Draft guiding document under preparation	Guiding document approved and issued
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	Provincial guiding document on water use right trading and government buy-back developed and issued			
► Demonstration counties establishing and maintaining an agriculture and water sector coordination mechanism for high-standard farmland construction and O&M (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No formal coordination mechanism	--	No formal coordination mechanism	Annual implementation of coordination mechanisms in six demonstration counties
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	Measured by the official establishment of the coordination mechanisms at the county level and the mechanism implementation throughout the Program period. These mechanisms will cover coordination on related investment planning, project design, implementation, and O&M to ensure synergy between main and on-farm irrigation and drainage systems and services. The agriculture and water sectors are required to share data on the High-Standard Farmland Construction Plan and the related water sector projects.			

Results Area 2: Reducing GHG emissions for low-methane development

► Increase in new/upgraded high-standards farmland area in demonstration counties (Hectare(Ha), Custom)



	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	51,183.00
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	Newly constructed or updated high-standard farmland area; Annual target is the cumulative value.			
► Farmers trained on the low-methane rice cropping package solution/technologies (of whom women) (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	13,238.00
Date	01-May-2023	--	17-Aug-2023	30-Jun-2028
Comments	Number of farmers who are trained on the low-methane rice cropping package solution/technologies per year. The low methane package solutions include the water-straw-fertilizer co-management measures, including water-saving practices, deep straw returning, and organic fertilizer application, as well as other complementary mitigation measures, such as deep application of nitrogen fertilizer, test-based formula fertilizer application, climate-smart rice varieties, and aerobic cultivation techniques. The training curriculum and training plan are subject to review by the World Bank. The cumulative numbers of women farmers to be trained for Years 1-5 are: 4,407; 8,816; 12,821; 16,826; and 20,831, respectively.			
► Rice areas where both AWD technology and deep returning of rice straw are used (Hectare(Ha), Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	117,198.00
Date	01-May-2023	--	17-Aug-2023	30-Jun-2028
Comments	It measures the areas of high-standard rice farmland adopting AWD technology and deep returning of rice straw, as guided in the government technical standards. Optimized AWD is promoted under this Program, including AWD at three rice growing stages: (i) The early stage of rice growing: around 7 days of cumulative drying before and after transplanting; (ii) The late stage of tillering: around 10 days of cumulative drying; and (iii) The yellow ripening to harvesting stage: around 15 days of drying before harvesting. The deep returning of rice straw should return straw residues into the soils with over 15 cm depth.			
► Increase in rice field area applying organic fertilizer (Tons/year, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	12,030.00	--	12,030.00	59,030.00
Date	01-May-2023	--	17-Aug-2023	30-Jun-2028
Comments	It measures the application of organic fertilizer in rice production; Annual target is the cumulative value.			
► Counties which pilot carbon trading (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	3.00
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	Number of the demonstration counties pilot carbon trading (cumulative)			



Results Area 3: Improving irrigation and drainage services for resilient rice production

► Demonstration counties completing a comprehensive agricultural water pricing reform (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	6.00
Date	30-Jun-2023	--	17-Aug-2023	31-Dec-2028
Comments	It measures the results of comprehensive agricultural water tariff reform in all demonstration counties, including (a) completing the O&M cost estimation of irrigation and drainage systems, carrying out O&M cost auditing and irrigation water pricing auditing, and establishing rational agricultural water tariff regime (including progressive tariff scheme); (b) establishing irrigation water quota management mechanism and the cap on total agricultural water withdrawal, developing water-saving reward mechanism, and establishing precise budget support/subsidy mechanism; (c) installing water flow measurement facilities; and (d) the promulgation of reformed water tariff. The indicator targets are cumulative.			

► Rice production area with sustainable irrigation and drainage services (Hectare(Ha), Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	42,891.00	--	42,891.00	125,899.00
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	It will motivate the counties to improve the long-term sustainability of irrigation and drainage services which are essential for climate-resilient and low-methane rice production. The sustainable irrigation and drainage services consist of (a) modernized irrigation and drainage infrastructure; (b) appropriate O&M arrangements with a well-conceived O&M plan and clear O&M responsibility; and (c) a sustainable O&M funding mechanism established to ensure O&M cost recovery.			

► Percentage of irrigated areas managed by farmer cooperative organizations (%) (Text, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Qiyang 20%, Jiahe 20%, Lukou 20%, Louxing 20%, Hanshou 65%, Dingcheng 0%;	--	Qiyang 20%, Jiahe 20%, Lukou 20%, Louxing 20%, Hanshou 65%, Dingcheng 0%;	Qiyang 51%, Jiahe 60%, Lukou 55%, Louxing 55%, Hanshou 90%, Dingcheng 50%;
Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	Percentage of irrigated areas managed by farmer cooperative organizations (%)			

□ of which with women on management team, % (Text, Custom Supplement)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Qiyang 20%, Jiahe 5%, Lukou 30%, Louxing 30%, Hanshou 5%, Dingcheng 0%	--	Qiyang 20%, Jiahe 5%, Lukou 30%, Louxing 30%, Hanshou 5%, Dingcheng 0%	Qiyang 50%, Jiahe 20%, Lukou 40%, Louxing 50%, Hanshou 30%, Dingcheng 60%

► Counties that pilot water rights trading or buy-back (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	3.00



Date	01-May-2023	--	17-Aug-2023	31-Dec-2028
Comments	Number of the Program demonstration counties that pilot water rights trading or buy-back (cumulative)			

Disbursement Linked Indicators

► DLI 1 Strengthening government management system for water-saving and low-methane rice production (Outcome, 30,000,000.00, 0%)				
	Baseline	Actual (Previous)	Actual (Current)	2028
Value	The related guiding documents, strategy and technical standards need to be developed or revised, and issued.	--	The related guiding documents, strategy and technical standards need to be developed or revised, and issued.	All documents developed and issued.
Date	--	--	17-Aug-2023	--
Comments				

► DLI 2 Demonstration counties establishing and maintaining an agriculture and water sector coordination mechanism for high-standard farmland construction and O&M (Intermediate Outcome, 25,000,000.00, 0%)				
	Baseline	Actual (Previous)	Actual (Current)	2028
Value	No county has official coordination mechanisms	--	No county has official coordination mechanisms	Six demonstration counties have maintained the coordination mechanism
Date	--	--	17-Aug-2023	--
Comments				

► DLI 3 Farmers trained on the low-methane rice cropping package solution/technologies (of whom women) (Number) (Intermediate Outcome, 50,000,000.00, 0%)				
	Baseline	Actual (Previous)	Actual (Current)	2028
Value	0.00	--	0.00	13,238.00
Date	--	--	17-Aug-2023	--
Comments				

► DLI 4 Rice areas where both AWD technology and deep returning of rice straw to soil are used (Intermediate Outcome, 62,500,000.00, 0%)				
	Baseline	Actual (Previous)	Actual (Current)	2028
Value	0.00	--	0.00	117,198.00
Date	--	--	17-Aug-2023	--



Comments

► DLI 5 Demonstration counties completing a comprehensive agricultural water pricing reform (Intermediate Outcome, 37,500,000.00, 0%)

	Baseline	Actual (Previous)	Actual (Current)	2028
Value	0.00	--	0.00	6.00
Date	--	--	17-Aug-2023	--

Comments

► DLI 6 Rice production area with sustainable irrigation and drainage services (Intermediate Outcome, 50,000,000.00, 0%)

	Baseline	Actual (Previous)	Actual (Current)	2028
Value	42,891.00	--	42,891.00	125,899.00
Date	--	--	17-Aug-2023	--

Comments