I. Project Context

Country Context

Since it embarked on a series of economic reforms starting in 1978, China has gradually shifted from a centrally-planned to a market-led economy. During this period, the economy has grown at a remarkable annual rate of about 10 percent and more than 500 million people have been lifted out of poverty. To sustain this rapid pace of development, China still has to address a number of challenges, including (a) maintaining high growth rates in the face of a complex external environment still reeling from the global economic crisis, (b) managing the resource demands and the environmental consequences of rapid growth; and (c) reducing high inequalities in incomes and opportunities.

With rapid industrialization and increased urbanization, the share of the agriculture sector in total GDP declined from 30% in 1980 to 10% in 2010. However the role of the agricultural sector remains essential to the country’s overall economic growth, rural employment, and poverty reduction. More than 36 percent (279 million people) of the total labor force is employed in the agricultural sector which feeds 1.3 billion people or 20% of the world population, with less than
11% of the world’s agricultural land. Maintaining sustainable food self-sufficiency, raising farmers’ incomes, and constructing the “New Socialist Country side” are top priorities on the government’s development agenda, as articulated in the 12th Five Year Plan (FYP 2011-2015). The FYP also outlines China’s commitment to reduce greenhouse gas emissions, and “actively cope with” and “increase adaptability to” climate change. It describes China’s plans to accelerate research, development, and application of low carbon technologies in a number of sectors including agriculture. It calls for improving the levels of adaptation to climate change of certain key sectors “such as agriculture, forestry and water resources”, and for enhancing the monitoring, reporting, and prevention of extreme climatic events.

**Sectoral and institutional Context**

China’s rapid agricultural productivity growth has been widely credited with initiating industrialization, inducing rapid reduction in poverty, and improving food security. Effective institutional reforms, especially the rural household contract responsibility system for farm land, coupled with market liberalization and rapid technological adoption has helped promote a dramatic expansion in agricultural output. China’s agricultural output grew at the rate of 4.6 percent per annum over the last three decades, more than four times its population growth rate. Grain crops are the most important in terms of area harvested (50% of total cultivated area), and value of output (40% of total value of agriculture output). Grain production increased from 325 mmt to 547 mmt over the last thirty years. The total land allocated to grain production however declined from 117 million ha to 109 million ha, indicating that the increase in production was driven by productivity gains.

Investment in irrigation, coupled with land saving technological change (improved seed varieties and fertilizers), and aided by market reforms played a key role in generating output growth. Total irrigated area increased from about 45 million ha in 1978 to nearly 60 million ha in 2009, now covering approximately half of the total cultivated area. Irrigation expansion also enabled a significant increase in the production of cotton, oilseeds, fruits and vegetables, and forage crops. As the economy grew and incomes rose, the demand for more quantity and quality, greater variety, higher value, and safer food has been going up. Meeting this rising demand for a more diversified and grain intensive diet will continue to be a priority for Chinese policy makers. Maintaining food availability, however, will have to be balanced with addressing environmental and resources sustainability, limited land and water resources, and increased climatic variability. Despite past success, the Chinese agricultural sector is facing renewed development challenges today. These include the following.

(a) Vulnerability to Climate Change. The effects of a changing and variable climate are already visible in China and are expected to accelerate in the future. Average annual surface temperature increased by 1.2°C over the last 50 years, and the increase was much faster in the north and northeastern provinces. Regional variations in precipitation have become more pronounced, with average precipitation levels dropping in the north, northeast, and northwest parts of the county while increasing in the south and southeast. Though overall average precipitation may increase, there is a growing concern that in some regions, rain is no longer available or is reduced at the critical stages of crop development. Extreme climatic events are also becoming more severe, with longer droughts occurring in the north and more severe floods affecting the southern part of the country. Coping with the significant variability of future climatic impacts may require geographic shifts in agricultural production and more flexible and efficient water resources management. It also requires building the capacity of agricultural support institutions and related stakeholders (e.g. research, extension, agro-meteorology, etc.), and improving the services delivery mechanisms to
provide sound and real time advice to farmers.

(b) Overexploitation of Water Resources and low Water Productivity. Overall, China ranks with the bottom 25 percent of countries in water availability per capita. The share in total water use by agriculture is 64 percent. Overexploitation of water resources, including withdrawals from rivers, and overdraft of ground water resources causing a drop in water tables, is a common problem particularly in the dry northern regions of the country. Raising irrigation system efficiencies and improving water productivity are key to better managing water resources in agriculture. Average water productivity for grains is reported to be around 0.7-0.8 kg/m\(^3\), which is much lower than the levels of 2.0-2.5 kg/m\(^3\) recorded in the more industrialized countries. More efficient and productive water use may be achieved through the rehabilitation and improvement of outdated, dilapidated and old irrigation and drainage infrastructure, ensuring adequate operation and maintenance of irrigation systems, promoting water saving irrigation technologies, adopting enhanced agricultural water management practices, and strengthening the capacity of farmers, water user associations, and other stakeholders involved.

(c) Overuse of Chemical Inputs. China has one of the highest rates of fertilizer and pesticide use in the world. The intensive use of chemical inputs has led to (i) degradation of soil fertility; (ii) pollution of water systems; (iii) higher emissions of greenhouse gases (GHG); (iv) lower profits to farmers; and (v) increasing concerns about food safety. Field evidence suggests that fertilizer use in some areas may be cut by 30-60% with little or no loss of crop yields. An integrated nutrient management approach that incorporates technical measures (precise fertilizer application through soil and water testing, improved soil and crop management, dissemination of organic fertilizers, nonpoint source pollution monitoring), capacity building (extension and training to farmers), policy aspects (promoting the development of organic, green and, non-pollution products, revisiting the subsidies for fertilizer manufacturers), and institutional interventions (role of farmer groups in knowledge transfer) is required to address this problem.

(d) Weak Farmer Organizations. Water User Associations (WUAs) fill an organizational and institutional gap in the irrigation management system and provide significant benefits such as improving irrigation systems operation and maintenance, contributing to water savings, reducing water conflicts, and ensuring better water fee collection rates. Despite early progress driven by government and donors’ collaboration, WUAs coverage remains limited in China and many existing WUAs continue to face financial, legal, and institutional challenges threatening their sustainability.

(e) Similar concerns have emerged about the development, governance, and performance of farmer cooperatives. Most of the cooperatives are organized along the “company + household” model, with a greater influence by companies (or by larger households) in the ownership, management, and decision-making. This structure also appears to be favored by local governments who tend to extend greater services and support to such cooperatives. Farmers’ cooperatives have an important role to play, particularly given the small and fragmented nature of Chinese farms, in facilitating access to markets for small producers and integrating them into higher value commodity chains. They are also a major conduit of knowledge and services to their members. The development of both WUAs and farmer cooperatives needs to be supported and monitored to ensure that farmer-led organizations are well equipped to operate and manage their assets, make their own decisions, and that the benefits accrue to all members equitably.

II. Proposed Development Objectives
The project development objective is to develop sustainable and climate resilient agricultural production systems in selected areas of Gansu, Hunan, Jiangxi, and Liaoning provinces; Xinjiang Autonomous region; and Chongqing municipality.
This will be achieved by investing in (i) irrigated agriculture infrastructure improvement, (ii) enhanced climate smart agricultural practices, and (iii) institutional strengthening and capacity building.

III. Project Description

Component Name
Irrigated Agriculture Infrastructure Improvement
Comments (optional)

Component Name
Enhanced Climate-Smart Agricultural Practices
Comments (optional)

Component Name
Institutional Strengthening and Capacity Building
Comments (optional)

Component Name
Project Management Support
Comments (optional)

IV. Financing (in USD Million)

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For Loans/Credits/Others

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V. Implementation

The project will be implemented over a period of five years, across 33 counties/districts within six provinces/municipality/autonomous region. The State Office for Comprehensive Agriculture Development (SOCAD), a department within the Ministry of Finance, and with offices at the provincial (POCADCs) and county levels (COCADs) throughout the country, is the lead responsible agency for project management and coordination. SOCAD is a highly experienced agency that has had a long and successful experience in preparing and implementing World Bank projects (IAIL 2, IAIL 3).
A National PMO (NPMO) headed by a Division Chief, has been set up within SOCAD. It will be responsible for project coordination, management support, monitoring and reporting, ensuring adherence to agreed standards, guidelines, and procedures, providing overall guidance on operational aspects to the various implementing units, and facilitating intra-knowledge transfer among project provinces and with external domestic and international agencies.

Project management offices (PMOs) have also been established at provincial (PPMOs) and county (CPMO) levels within the POCADs and COCADs offices of the participating provinces. PMOs will be staffed with officers who have experience in project management, financial management, procurement, and monitoring and evaluation. They will also be supplemented with deputed officers from the technical line bureaus of water resources, agriculture, forestry, and finance at the corresponding levels. PPMOs and CPMOs will be in charge of day to day management of project activities, overseeing project designs, implementing and supervising project activities, arranging for counterpart-funding and local labor contribution, preparing annual work plans, financial plans, procurement plans, monitoring and reporting on project progress, outputs, and outcomes.

Project Leading Groups (PLG) comprising representatives from local government and line bureaus including Finance, Water Resources, Agriculture, Forestry, Environmental Protection, Weather Bureaus, have been established at the provincial and county levels to provide leadership, policy guidance, and strategic directions to the PMOs within their respective jurisdiction.

Mobile Expert Teams (MET) will be established under the PPMOs and CPMOs to provide expert advisory services, technical assistance, and review of design plans. METs will advise the PPMOs within the province, and project stakeholders on technical and institutional matters to facilitate project implementation. METs would comprise of leading experts in water conservation, engineering, agronomy, horticulture, agro forestry, climate change, research and extension, meteorology, and environmental sciences.

Technical Agencies including water resources, agriculture, forestry, environment, and finance will be involved in project planning and implementation. These departments designate full time staff to the project PMOs to help in day to day project implementation and coordination. Secondly, these technical agencies will help provide materials and technical guidance at the provincial, municipal and county level to facilitate project implementation. Finance bureaus will be responsible for the allocation of counterpart funds, reimbursement and disbursement, financial management, and participating in procurement. Water resources bureaus will assume the responsibility of planning and design for irrigation and drainage infrastructure works. Agricultural agencies will provide extension and technical services to farmer groups including training and implementation of climate smart agriculture activities, as well as guide the development of farmer associations and cooperatives.

Farmer organizations including Water User Associations, Farmer Associations, and Farmer Cooperatives will also participate in the implementation and supervision of project activities. WUAs will participate in system planning and design, construction supervision, as well as training. WUAs will gradually take over the responsibility of operation & maintenance (O&M) for improved irrigation and drainage systems under the project. Similarly farmer cooperatives/farmer associations will be involved in monitoring the implementation of the demonstration activities, identifying their training needs and facilitating services delivery. Women are expected to play a key role within the different farmer groups, by contributing to and benefiting from project investments.
VI. Safeguard Policies (including public consultation)

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Comments (optional)

VII. Contact point

World Bank
Contact: Rabih H. Karaky
Title: Senior Economist
Tel: 473-0585
Email: rkaraky@worldbank.org

Borrower/Client/Recipient
Name: PEOPLE’S REPUBLIC OF CHINA
Contact: Mr. Yao Licheng
Title: Director
Tel: 86-10-68551124
Email: yaolicheng@mof.gov.cn

Implementing Agencies
Name: State Office for Comprehensive Agriculture Development
Contact: Ms. Wang Lanying
Title: Division Chief
Tel: 86-106855-3312
Email: socad_wly@126.com

VIII. For more information contact:
The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-4500
Fax: (202) 522-1500
Web: http://www.worldbank.org/infoshop