Searching for a Feasible Pathway for Sustainable Agricultural Development and Income Increases for Farmers

Executive Summary

Jiangxi Province, on the southern bank of the lower reaches of the Yangtze River, is one of China’s largest agricultural producers. However, Jiangxi is characterized by uneven and slow rural development, rough agricultural production techniques, and low income among farmers. In recent years, productivity has suffered from bottlenecks in agricultural infrastructure, a lack of access to market, and inadequate production technology and technical knowledge and capabilities among farmers. In 2004 the province proposed a large-scale agricultural project to improve rural and agricultural development in the province, focusing on water conservation, irrigation, drainage infrastructure, agricultural productivity, and market systems. This case study looks at the Chinese Government’s efforts to develop sustainable agriculture and boost income growth for farmers through the World Bank’s Jiangxi Integrated Agricultural Modernization Project (JIAMP). The study describes how the Jiangxi Provincial Government responded to delivery challenges, including: the need to bolster local governments’ commitment to the project; the gap between initial plans and the actual needs of farmers; and the need to revamp and clarify water management structures at the local level.
Introduction

Jiwei Orchards, located in Jiangxi’s Shicheng County, has more than 12,000 Newhall navel orange trees, which cover an area of 19 hectares. However, the orchard’s high elevation and the looseness of its soil hinder water retention. When the orchard first opened in 2003, the owners lacked the funds needed to build an irrigation system, so they manually carried water during the dry season to keep the trees alive. The orchard remained prone to disease outbreaks during the dry season due to insufficient watering, however, and the owners periodically experienced severe losses. In 2006, one of the orchard’s shareholders, Mr. Lu, successfully convinced his partners to apply for funds from a World Bank loan, administered by the local finance bureau, to construct an irrigation system. The system included a cistern, a mid-size pond, and 20,730 meters of underground piping, ensuring that all of the trees could be irrigated. Over the following three years the orchard’s productivity grew by 30,000 kg in 2007, 45,000 kg in 2008, and 50,000 kg in 2009—increases of 26 percent, 38 percent, and 25 percent, respectively. Like many farmers in the area, Mr. Liu and his partners increased their production of oranges, and with it their income.

The story of Jiwei Orchards is an example of the kind of issues confronting the agricultural sector in Jiangxi province, as well as the impact of the World Bank’s Jiangxi Integrated Agriculture Modernization Project. While lack of access to irrigation is associated with farmer poverty in Jiangxi, the project reached an estimated 1.29 million people, and on average farmer incomes increased from RMB 2,256 to RMB 3,451 (53 percent) during the project’s implementation in the project area (World Bank 2011). To reach these outcomes, the project had to adapt during implementation to respond to complex local contexts, which demonstrated its ability to make adjustments based on the actual needs of beneficiaries. The project also had to link the combined strengths of project teams, different levels of government, and development partners.

Delivery Challenges

Aiming to improve livelihoods and encourage agricultural development, the Jiangxi Provincial Government initiated the JIAMP. The project comprised a wide range of components, including strengthening irrigation systems, improving water management, and building market systems, across a broad geographic area consisting of 21 counties. Implementers faced a series of recurring delivery challenges; these varied across the diverse counties participating in the project, but in general included issues with obtaining buy-in from local governments, the need to adapt targets and modalities for project components, and water management systems that lacked clearly defined levels of responsibility.

The Need to Secure Strong Local Government Buy-In

There were different levels of understanding, acceptance, and commitment to project implementation among
government officials at various levels. Moreover, a lack of continuity in leadership at the local level and a long preparation phase affected the incentives and motivation of officials in some project counties, thereby slowing implementation. Local governments were apprehensive about the cost of the project, and the slow pace at which the project was prepared hindered commitment in its early stages.

**Adapting Targets for Project Plans**

Beginning with the preparation phase, there was a gap between the initial project design and its components, and the demands of local communities. The implementation plans did not adequately reflect the needs of farmers, and did not fully account for the industry structures and development targets of the project’s counties. For example, the irrigation and drainage component for the project was initially underemphasized, despite its crucial importance to farmers. Furthermore, the preference of farmers for producing high-value crops, such as the oranges for which the area is famous, may have been underestimated. The project team had to reassess the development needs and the orientation toward certain types of market activity among farmers. The demand for farmer marketing groups and central market construction may also have been overstated, while very strict loan requirements also dissuaded certain farmers from taking out loans. This required some of the project’s components to be recalibrated and retargeted to adapt to local conditions on the ground.

**Water Management Structures**

The project framework needed to work with local water management structures, but it did not initially define the responsibilities, rights, and duties of the local government and the water users. The existing water management structures in Jiangxi featured unclear lines of responsibility, and farmers did not participate fully in the management of local water works. In Jiangxi, there are regional water management agencies administered by the Provincial Department of Water Resources, local Water Resources Bureaus, and local water management organizations run by civil societies, and so it was not always clear which entity should assume responsibility for water resources.

**Tracing the Implementation Process**

The JIAMP was implemented over four years, from its approval by the former National Planning Committee in 1998 to negotiations and signing of agreements with the World Bank in 2004. The design of this project aimed to follow a market-driven model to help local farmers increase their income and ensure sustainable development. The project had four components: (a) Irrigation and Drainage, (b) Farm Production Improvement, (c) Market Systems Development, and (d) Project Management, Monitoring, and Evaluation.

To facilitate the implementation of this project, the Jiangxi Provincial Government established a Project Leading Group (PLG), which included representatives from the Provincial Development and Reform Commission, Department of Finance, Department of Agriculture, Department of Forestry, Department of Water Works, and the Agriculture Foreign Loans Office. The government coordinated department resources at the provincial level, and established specific project office’s responsibilities toward project implementation and supervision at the local level.

**Identifying Project Counties and Entry/Exit Mechanisms**

Identification of the counties that would participate in the project was extremely important. According to World Bank guidelines, the inclusion of participating counties should be based on government policies and requirements at the local level to improve market systems and increase farmers’ income. The Provincial Project Office proposed several principles, the most important of which included: (a) allowing counties to freely participate in or withdraw from the project; (b) the capability of local governments to effectively implement components to improve irrigation and drainage, farm production, and market systems; and (c) requiring that counties having enough fiscal resources to ensure funding and repayment of loans.

In the early stages of the project, the Provincial Project Management Office (PMO) designated 21 participating counties in four cities: Jiujiang, Fuzhou, Shangrao, and Ganzhou. However, it soon became clear that some local governments were not fully committed to its implementation. This was especially for eight counties in
particular: Yihuang, Nancheng, and Chongren in Fuzhou; Wuning and Yongxiu in Jiujiang; and Jinnan, Zhanggong, and Huangji in Ganzhou. Progress in these counties was slow, and within a few months of implementation, all of them applied to withdraw from the project.

The provincial project team immediately took measures to address this problem, meeting with its counterparts in each of these counties and exploring the reasons for their withdrawal. They found that there were generally four major concerns among the eight counties that withdrew.

First, the local governments of these counties thought that the proportion of investment in the core component—Irrigation and Drainage—was too large, and required too great an investment to take on. Furthermore, it lacked direct or clear benefits, and was difficult to evaluate in terms of impact and risk.

Second, some counties experienced high rates of turnover in leadership, and the new officials in charge were often not familiar with the project activities that had been previously approved. Some new leaders set different development agendas, which they felt were not aligned with the objectives and project implementation approaches adopted by the preceding leadership. Hence, they were reluctant to move the implementation agenda of JIAMP forward.

Third, some counties had limited capacity to implement the World Bank project. A lack of knowledge about the project design concept, and World Bank operations, procedures, and policies, was an obstacle. Furthermore, the staffing of the project implementing teams was rather slow, and was reliant on a high proportion of part-time personnel, creating unstable organizational structures that affected the local governments’ ability to deliver project activities effectively.

Fourth, the preparation phase of the project took some time, as did the approval and allocation of matching funds by the central and local government. Some county governments switched their focus to other priorities due to the long wait for project funds.

Finally, the appreciation of the Renminbi against the U.S. dollar reduced the total value of the loan from the World Bank, making the loan less attractive to some county governments, particularly those that had fewer resources.

After surveying the counties, the PMO suggested that counties facing serious delays in implementation should make adjustments or withdraw from the project. In the meantime, the PMO held meetings to actively promote the project and identify other potential participant counties.

The PMO also clarified that all the preparatory work was already in place, which tackled concerns about the delay in fund allocation experienced by some counties. For instance, the World Bank Loan Operations Manual, domestic pairing funds, and Project Implementation Plans were all available, and the project funds were ready to be distributed to the participating counties.

Furthermore, the PMO provided interested counties with comprehensive information sessions to make sure that the interested county government had full knowledge about the details of project implementation. These sessions introduced key issues, including the project implementation framework, content design, investment targets, work progress, entry procedures, and expected results.

The World Bank team and the PMO trained inexperienced project staff on project management, procurement, finance, safety policies, beneficiary participation, and monitoring and evaluation, which increased the capacity of the project implementing teams in the counties. In addition, project staff were also given opportunities to travel domestically and overseas, for training and field visits. Furthermore, the PMO encouraged frequent communication and peer learning among project staff from different participating counties. It closely monitored their progress, and provided timely support to implementing teams in the counties.

After re-application and review, the PMO ultimately selected eight new project counties: Poyang in Shangrao; Dayu, Shangyou, Dingnan, Huichang, and Ruijin in Ganzhou; Jingdezhen in Leping; and Guixi in Yingtan. The withdrawal and addition of eight project counties, referred to as an ‘8-in 8-out’ reconfiguration in project documents, required in-depth communication and consultation with the project implementing teams. The PMO provided tailored support to strengthen the implementing capacity of these teams. Although the project lagged behind at the beginning of the implementation phase, these efforts promoted buy-in from local government and empowered the local implementation teams to work more effectively.

**Project Adjustments to Meet the Needs of Farmers**

A number of issues affected the actual operation of the JIAMP. These included the appreciation of the Renminbi, which reduced the funds available for county
governments (these were already scarce, owing to a lack of resources in the impoverished counties); the initial inability of the irrigation components to meet local needs, which initially caused low farmer participation and engagement; and difficulties in ensuring that the development of market systems met local market demand. The specific content and mechanisms in the initial design proposals did not meet the actual needs of farmers—the direct beneficiaries. This was evident in two ways: a considerable misalignment in the location and focus of the irrigation projects, which did not match industry structures in certain areas; and a clear difference in the objectives of the development of market systems. This included creating physical markets and farmer marketing groups, which arose from the needs or interests of the farmers embedded within local market systems. These objectives did not take into consideration the spending habits of farmers, market acceptance, or the level of development of market economies in rural areas.

The RMB/US$ exchange rate fluctuated due to the appreciation of the Renminbi, which forced the Project Office to reallocate and reassess the scale of both investment and construction projects. The total amount of investment in U.S. Dollars remained at US$153.98 million, but when converted to Renminbi it totaled only RMB 1.16 billion, a full RMB 116.13 million lower than initial estimates. This decrease in total investment forced decreases in sub-project investment. After consulting with the World Bank, the Provincial Project Office established a set of principles to adjust sub-projects in each of the project areas and implemented adjustments. The overarching strategy was to continue to focus on irrigation as the primary component, which was seen as the most important part of tackling the development challenge of rural agriculture development. This was codified in more specific formulas as follows: 1) investment in water works projects (including investment in orchards) should make up no less than 45 percent of the total project investment, and each county should construct at least one field irrigation zone; 2) investment in other sub-projects should not exceed investment in water works projects; 3) investment in rural orchards in any county should not exceed 67 percent of investment in field productivity sub-projects (including orchards both within and outside orchard irrigation areas); and 4) investment in market systems development sub-projects should not exceed original ratios (13.8 percent of total investment). Adjustments made to sub-projects in each project zone had to follow these principles. Furthermore, other government programs were already tackling some subcomponents (e.g., soil improvement and certain training programs), and so emphasis on these components was decreased accordingly (World Bank 2011).

First, changes to investment ratios for each component varied by county, but the Irrigation and Drainage components remained the most important elements, in principle and in implementation. Prior to implementation, the massive investment capital required to build irrigation and drainage systems, combined with underdeveloped mechanisms for cooperation and collective mobilization across various levels of government and farmers, meant that major water works in Jiangxi Province often only received minor maintenance and repair work. Mr. Yuan, the former director of the Provincial Project Office, described the situation in an interview: “Most of the reservoirs and aqueducts in Jiangxi were built in the 1960s and 70s. Decades of use meant that many pipelines were in disrepair and water was not getting through, making it difficult for farmers to get water and directly impacting agricultural productivity and the income of farmers.”

When the project was first implemented, 54 percent of the total planned investment was allocated to irrigation and drainage projects. Before the project was forced to make adjustments nearly halfway through implementation, the PMO had worked with city project offices to carry out two major surveys of the entire project area—one in late 2006 and another in May 2007. These surveys were designed to prepare for the Mid-Term Review (MTR). The majority of the work consisted of meetings with project participants (county governments, departments, and direct/indirect beneficiaries) to understand the actual state of implementation and gather recommendations on future implementation. After gathering and analyzing the survey information, the PMO established initial mid-term project adjustments and submitted them to all the members of the PLG. In June 2006, the PMO officially began discussions of its plans for the mid-term adjustments. These did not result in any changes to the project’s goals or framework, and the specific adjustments to components stated, “…investment in other components shall not exceed

1 The farmer marketing groups were professional associations and cooperatives that could be formed, managed, and financed voluntarily by interested farmers. These groups aim to provide various kinds of support to their members, as well as easing market access and increasing their members’ incomes.
investment in irrigation and drainage.” Despite a RMB five million decrease in investment into the irrigation projects (due to a decrease in the amount of total investment), the investment into irrigation as a portion of total investment actually increased from the planned 54 percent to 59 percent, which maximized investment in the irrigation component. Each county carried out construction and maintenance of waterways in drainage and irrigation zones, and local governments invested large amounts of capital and manpower.

By the end of the project, field irrigation sub-projects had rebuilt 210 irrigation zones, covering a total area of 895,517 mu (Office of the Leading Group for World Bank Financed Jiangxi Integrated Agricultural Modernization Project 2008). Effective irrigation had increased from 40 percent to 75 percent, resulting in a production volume increase of 32 kg per mu for both paddies and vegetable fields.

Second, considerable benefit was gained from the orchard irrigation projects in Ganzhou, which was an important addition to the project. The addition of orchard irrigation projects was a direct response to experiences and new information gathered during implementation that resulted in pursuit of more effective locally tailored solutions. The initial design of the project responded to calls from the national and provincial governments to improve irrigation infrastructure, and so irrigation components were limited to standard irrigation districts located on flat ground. Counties had to accept this framework to submit successful applications.

Since Ganzhou’s topography is generally mountainous, irrigation projects should have been placed on hillsides, serving navel orange orchards. However, the 12 project counties in Ganzhou still incorporated field irrigation into the project activities. This led to a lack of interest from farmers in Ganzhou, who wanted more investment in irrigation infrastructure for their orchards. As the County Project Office faced resistance from farmers, the project was not able to move forward.

Faced with these difficulties, the PMO decided to take action. In 2007, it carried out surveys and held meetings with county project offices and farmers’ representatives. After several rounds of surveys, it learned that farmers in Ganzhou needed irrigation works that served orchards, as the navel orange was the economic pillar of Ganzhou’s economy. Based on its findings, the PMO submitted a recommendation to the World Bank to change the irrigation component in Ganzhou to serve orchards instead of fields. The World Bank reviewed the report and sent experts to Ganzhou to carry out on-site and market surveys to evaluate the effectiveness of the orchard irrigation component. It was estimated that after irrigation projects were completed, the internal rate of return would increase from 14 percent to 34 percent. This convinced the World Bank to agree to push orchard irrigation projects in Ganzhou, and the PMO reevaluated implementation plans, increasing the number of orchard irrigation zones from 0 to 668. This, in turn, increased interest in the project from county governments and farmers. Orchard irrigation in Ganzhou, with irrigation coverage increasing from 50–60 percent to 95 percent was of great benefit to the local economy. The production output of navel oranges rose by 636 kg per mu, an increase of 56.44 percent.

Third, changes to the market systems component served to highlight market-driven development and demand among farmers. Building on the irrigation component, the market systems development component was designed to restructure and upgrade agricultural markets at the county and township level within project counties. It was also intended to provide support for small agro-processing enterprises, specialized households, and farmer marketing groups. The original plans called for the construction of 36 physical markets and the establishment of 66 farmer marketing groups within the project area. However, the physical markets and farmer marketing groups established during the operation did not appeal to the local community. Convenience and sales preferences meant that geographically scattered farming families and specialized households rarely took their produce to local farmer’s markets to sell. Instead, small farmers sold their produce on the street or in the local markets closest to them, while larger specialized households tended to establish contracts directly with large buyers. The market model as envisioned in initial project design did not match local preferences or practices.

Based on levels of marketization and demand, the PMO made large-scale changes to the market systems component, shifting its focus from constructing physical markets and marketing groups to financing large-scale agricultural production households and small-scale agro-processing enterprises. This decision was then submitted to the World Bank for approval. After the

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2 Mu is a Chinese unit for measuring area. One mu is equal to 614.4 square meters, or 0.067 hectares.
Mid-Term Review, the number of physical markets was reduced from 36 to four, and the number of farmer marketing groups was reduced from 66 to two. At the same time, the PMO refocused the development of market systems to support specialized households and small businesses, increasing the number of these entities in the project from 46 to 114. The funding allocated for the construction of markets was also transferred to programs providing loan support and technical training to specialized households and small processing center. This encouraged the use of ‘company + base + farmer’ or ‘company + farmer’ organizational models, which integrated production, processing, and sales into a single operational structure, and thereby encouraged farmers to produce and protect their economic interests, while also ensuring that agro-processing enterprises had a stable source of raw materials. Many specialized households gained considerable wealth from this project, which inspired other farmers in the area to participate (Jiangxi Provincial Finance Department 2010).

Establishing Farmer Water User Associations and Increasing Farmer Participation

Establishing farmer Water User Associations (WUAs) was a major innovation within the JIAMP. WUAs are associations of farmer members that are formed to manage water for agricultural use at the local level. WUAs help to set fees and allocate water shares among their members, while also contributing to the operation and maintenance of small water infrastructure works. The WUAs used a management model that encouraged voluntary farmer participation, independent management, and self-service. Their goal was to adopt a ‘contractual spirit’ and ‘market mechanisms’ to resolve conflicts and drawbacks associated with local irrigation management, thereby creating a positive and sustainable environment for the operation of field water works projects after investment.

Prior to the establishment of the WUAs, the only structure in place to manage water resources was the Department of Water Resources, a limited number of water resource management organizations, and individual family-run units that assisted in water resource management. The power resources and organizational structure that were being used to manage water were unevenly distributed. When the project began, the vast majority of farmers in the project area did not understand, and even rejected, the idea of joining WUAs. There were three major reasons for this. First, following the reconstruction of irrigation zones, farmers would have to go from paying almost nothing for water to being charged a fee. Second, there were considerable differences in the water resources available to farmers in the upper-, mid-, and lower-reaches of some large rivers that passed through certain counties or townships. This was due to their physical location, topographical makeup, and environment, including flooding and drought. This resulted in disagreement over whether WUAs should be established and how they should be operated. Third, in the initial phase of implementation, the project teams did not have a solid understanding of how to help farmers set up their WUAs, and there were too few promotional and training activities. Furthermore, the water management agencies at various levels of government did not support or work with the WUAs.

In response to farmers’ resistance to WUAs, the PMO adopted a method of piloting programs, followed by further expansion. After initial preparatory work and research, the first pilot WUA—the Qinjiang East Irrigation Zone WUA—began operating in Shicheng County in August 2004. This zone was located to the northeast of the county seat (the administrative center of Shicheng county), and had 442 ha of cultivated land. The vast majority of this area lacked field irrigation infrastructure, with more than half of the irrigated land subject to drought and flooding for most of the year. Surveys conducted by the PMO revealed that the cost of water per μu was RMB 110, and that there were frequent conflicts over water resources between farmers in the upper- and lower-reaches of the irrigation system, resulting in further hidden water use costs (e.g., costs for guarding water resources). In 2004, Shicheng County used loans from the World Bank and other allocated domestic funds to construct water works projects. It also reformed the internal structure of the main organization in charge of irrigation system management within the irrigation zone. This involved establishing WUAs at the ends of branch channels to resolve the allocation of water and maintenance in fields below the branch level.

The process of establishing the Shicheng County WUA proceeded in several phases. First, an organizational structure was created for training, consisting mainly of teams from the PMO training members of the County Project Office, who then trained workers at the township level using a ‘train the trainers’ model suggested by
the World Bank. Next, the WUA fielded candidate representatives, who were chosen through open elections among villagers. The representatives were sent to WUA meetings to vote on a management structure and managers, a position usually taken by the village head or a village elder. Following this step, a charter and structures were created for financial management, water use management, and project maintenance. This ensured that the WUA had a structure to follow. Finally, once the WUA was operational, it gradually began to collect water fees and standardize water use within the irrigation zone, which made water usage more efficient.

In the course of promoting farmer WUAs, the PMO also worked closely with the Provincial Department of Water Works to remove any institutional barriers that were preventing the establishment of WUAs. The World Bank also provided dedicated funding support for training, and for sharing content and methodology with WUAs. By the end of the project, a total of 218 WUAs were established within the project area, with approximately 22,890 farmers participating. They covered a wide range of communities and localities. By helping to conserve and use water resources more efficiently, production costs for farmers were reduced by 20 percent (Office of the Leading Group for World Bank Financed Jiangxi Integrated Agricultural Modernization Project 2010).

Lessons Learned

Inspiring Commitment in Local Governments and Improving Implementation Capacity

The Jiangxi Integrated Agricultural Modernization Project required the coordination of different sectors, government agencies, and organizations. Comprehensive development projects like this require an extended period of time from inception to execution, and involve a wide range of entities at a number of levels. The commitment and capacity of local implementing agencies are essential to their success. The local governments lacked experience in implementing projects with foreign capital however, and were unfamiliar with the procedures and policies that this would entail. They also proved unable to properly predict the potential outcomes and risks associated with implementing the project. Moreover, the lengthy preparation time for the project, when coupled with turnover and the lack of continuity in local government, made it more difficult to ensure buy-in and encourage enthusiastic engagement from the farmers. Once the project got going however, the meetings and discussions organized by the PMO provided a comprehensive explanation of the framework, content, planning, and expected outcomes of the project. The PMO also made adjustments in several project counties, leading to the stakeholders in these counties accepting the new concepts, goals, and framework. Timely adjustments in participating counties, together with systematic training and communication sessions, helped strengthen local governments’ commitment and improve their execution capabilities.

Adjusting Project Content to Meet Local Needs

This project was intertwined with the livelihoods of its beneficiaries, with adjustments in agricultural structures, and with the economic development of the area. It was necessary to understand farmers’ practical needs to ensure their active participation in the design, construction, and supervision of the project. During the execution of the project, the provincial PMO conducted on-site surveys in the project area, and made timely adjustments to the amount and method of investment in components. It also adjusted the content of the project, taking into consideration the wishes and needs of the farmers. These changes helped to incentivize farmers to participate in project activities (as seen, for example, in the shift towards providing irrigation assistance for orchards), which in turn sped up implementation and enhanced its impact.

Establishing Water User Association to Strengthen Farmer Participation in Water Management

The ability of the beneficiaries to participate as much as possible, and have their views incorporated into project implementation through a public participation platform, was an important measurement of the project’s impact. Throughout the course of the JIAMP, the project team encouraged full participation in WUAs using a model of ‘pilots + promotion.’ This model encouraged farmers to participate in a variety of WUA aspects, including the calculation of irrigation profits; the independent management of irrigation infrastructure; the independent
calculation of changes in water use fees, before and after the establishment of associations; voluntary participation in water user associations; and the democratic election of association representatives and workers. This created a framework for the management of water resources by farmers and for farmers, and laid a solid foundation for the long-term operation of the project’s infrastructure.

The experience of the Qinjiang East Irrigation Zone WUA, for example, showed the importance of encouraging farmers to participate fully in the establishment of WUAs. It also highlighted the importance of calculating water usage costs independently before and after establishing a WUA, and allowing farmers to join WUAs voluntarily. In establishing a WUA to manage the use of water resources, Shicheng County was able to make water use more efficient and reduce per-mu production costs for farmer. This cut their water costs and also reduced water usage time.
# Annex 1: Timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Relevance/Reason for Inclusion</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>Project Inspection; Initial Preparation Report sent to former State Planning Commission; Ministry of Finance; and World Bank China Representative Office</td>
<td>Inspection results and reports provided a foundation for later project discussion.</td>
<td>Initial Preparation</td>
</tr>
<tr>
<td>1998</td>
<td>Approval by former State Planning Commission; multiple consultation meetings</td>
<td>The project became a state-sanctioned project.</td>
<td>Advancement Tool</td>
</tr>
<tr>
<td>1999</td>
<td>Project renamed Jiangxi Integrated Agricultural Modernization Project; Memorandum of Understanding signed</td>
<td>The official name change of the project signaled an end to the pilot design work.</td>
<td>Adjustment/Adaptation</td>
</tr>
<tr>
<td>2000</td>
<td>Project pre-evaluation and Training</td>
<td>US$500,000, provided by the World Bank, was used to carry out project training and pre-evaluation.</td>
<td>Training/Adaptation</td>
</tr>
<tr>
<td>2001–2002</td>
<td>Project listed in Jiangxi’s Five Year Plan</td>
<td>Project pre-evaluation and technical evaluation documents submitted; Project Environmental Impact Report approved</td>
<td>Adjustment/Adaptation</td>
</tr>
<tr>
<td>2003</td>
<td>Feasibility Report Completed; World Bank Negotiations Completed</td>
<td>China’s National Reform and Development Commission approved the Project Feasibility Report after negotiations were completed. The project was approved by the World Bank Board of Directors.</td>
<td>Feedback</td>
</tr>
<tr>
<td>2004</td>
<td>Project Initiation and Implementation</td>
<td>The World Bank, Ministry of Finance, and the Jiangxi Provincial Government signed a Loan Agreement and Project Agreement; the Jiangxi Provincial Government held the Project Implementation Staff Meeting.</td>
<td>Turning Point</td>
</tr>
<tr>
<td>2004</td>
<td>Adjustment to Project Area – original area of 21 counties (cities/districts) in four cities changed to 21 counties (cities/districts) in five cities</td>
<td>Varied progress in different project counties (cities/districts); large changes in exchange rates; massive changes in domestic and international market environments</td>
<td>Turning Point/Adjustment</td>
</tr>
<tr>
<td>2006</td>
<td>Important addition of orchard water works in addition to field irrigation projects</td>
<td>The 21 project counties (cities/districts) in Ganzhou were key implementation areas and had considerable impact on overall project implementation</td>
<td>Turning Point/Adjustment</td>
</tr>
<tr>
<td>2005–2008</td>
<td>Mid-term adjustments with project areas withdrawing or joining; changes in content and investment ratio of all sub-projects</td>
<td>Actual needs of project area governments and farmers; market changes; adjustments to China’s agricultural/rural development strategy</td>
<td>Turning Point/Adjustment</td>
</tr>
<tr>
<td>2010</td>
<td>Project Completion</td>
<td>Project was completed in May 2010; Completion Report on the Jiangxi Integrated Agricultural Modernization Project submitted</td>
<td>Project Completion</td>
</tr>
</tbody>
</table>
Annex 2: Map of Project Sites in Jiangxi Province

Note: Project counties are highlighted in yellow.
Annex 3: Process Map

**Background:** Jiangxi is characterized by uneven and slow rural development, rough agricultural production techniques, and low income among farmers.

**Change Theory:** Rural development that is market-oriented and sustainable promotes upgrades of agricultural industries and increases in farmer income.

**Response Measures:** Four ancillary components, including irrigation works, to create a comprehensive system for the modernization of agriculture in Jiangxi.

**Core Challenges:** Long-standing urban-rural dichotomy; extreme lack of resources in rural areas; lack of development mechanisms.

**Implementation Strategies:** Establish response mechanisms at all levels (project leading groups); create PMOs at all levels to coordinate project work.

**Project Outcomes:** Investment of RMB1.17 billion benefitted 266,900 rural households (1.29 million people) and established 218 water user associations.

**Long Term Impacts:** Corrected imbalances in rural resource allocation and established rural market systems and water management structures.

**Turning Point:** Leadership changes and turnover in the project areas, which slowed progress in some areas.

**Growing Pains:** Lack of support for water user associations and insufficient project localization.

**Phased Outcomes:** Production of an Implementation Guide and Financial Management Guide as well as the establishment of water use organizations and water user associations.

**Phased Outcomes:** “8-in, 8-out” adjustment and creation of market systems.

**Phased Outcomes:** Widespread creation of water user associations and adjustment of irrigation projects in Ganzhou.

**Implementation Strategies:** Intermediate reviews and adjustments of project areas and project goals; establish standard review mechanisms.

**Implementation Strategies:** Adopt a multi-level training system for PMO staff, local government officials, and farmers.
Annex 4: Stakeholder Map

Legend:
1) Solid lines indicate direct, strong relationships between agencies, organizations, and individuals, which are either administrative hierarchy relationships, or between project implementing agency and direct beneficiaries.
2) Broken lines indicate an indirect, weak relationship between agencies, organizations or individuals, which generally provided coordination, communication, or mutual support.
### Annex 5: Interviewed Individuals

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Position</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Zhang</td>
<td>World Bank</td>
<td>Project Manager</td>
<td>Nov. 20, 2015 P.M.</td>
</tr>
<tr>
<td>Mr. Yuan</td>
<td>Jiangxi Province Office of Foreign Capital Use in Urban Construction</td>
<td>Former Director</td>
<td>Nov. 21, 2015 A.M.</td>
</tr>
<tr>
<td>Mr. Li</td>
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References


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